***SIBIS***
IST–2000-26276
Statistical Indicators Benchmarking the Information Society

# SIBIS – Workpackage 2: Topic research and indicator development

## Topic Report No. 6: Social Inclusion

Tasks 2.1 + 2.2 (redrafted)


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# Deliverable preamble

The work undertaken in this report is two fold. Firstly, it was sought to offer a comprehensive (within the scope of the project) and up-to date expose of the Topic of social inclusion and the Information Society. The objective here was to analyse the topic (including a review of academic literature) and to report about the existing statistical coverage, with the aim to provide a coherent framework for the grounding and subsequent development of the indicators aimed at capturing this Topic. It was undertaken to do this, in the first instance, by examining the Topic in some detail, starting from the relevant policy issues. The work done accomplished in this task will be the basis of the questionnaire for the eEurope Surveys and the indicators specified in this task and recommended for piloting in the survey will need to be translated into survey questions.

The next step was outlining topic's structure in a way that is amenable to its appreciation from different, albeit somewhat associated perspectives. Furthermore, the topic was also fragmented into several sub-topics and some of the main issues related to these sub-topics are outlined, with the purpose of providing a structured pathways of innovative indicator development, but also for gaining a better grasp of the indicators designed and used to encapsulate and capture this topic. This process is also conducive to exploring potential uses for some of the existing indicators. Finally, and consistent with the project's overall aims, the way in which the framework was developed (both in terms of its multi-perspective approach and division into subtopics) is sensitive towards the current policy concerns. It has to be emphasised tough that, somewhat inevitably, it is not always possible to fully align policy makers' agenda and aims with the scientific requirements of the project.

As briefly mentioned above, the 'outcome' aim of the report is to translate some of the relevant policy concerns into a coherent set of Information Society indicators [1]t, and to show the way forward for the initial selection of indicators relevant for the topic of social inclusion and the Information Society. This process is more discernible in the case of some indicators and their 'pathways' then others. This is mainly so due to the different levels of articulation of, and priorities assigned to the prevailing proclaimed and inferred policy aims. Another related issue was the insufficiency of possibilities to translate some of the policy aims into effective and efficient, feasible indicators. The latter become apparent when one of the report's task was revisited –i.e. to provide inputs into survey modules design, i.e. effectively building and compiling the surveys [instruments] to be conducted by the SIBIS project. However, regardless of the project's main methodological approach, it was sought not to exclude unduly the policy aims and related issues from our review. Of course , Sibis has sought to expand beyond strictly proclaimed agenda and some indicators will also be sought arising out from the relevant perspectives on the Topic.

The main emphasis in this report tough has been put on grounding and generating those indicators for which data that can generally be gathered via so called 'omnibus' type of surveys, which in turn allows for a comparative, ' snapshot' picture among the subgroups of population to be obtained. In addition, despite expectations that the scope for generating 'decision makers' related indicators would inevitably be somewhat more limited, the way in which the topic was analysed suggested that relevant indicators for this area can also be generated and piloted. It has to be mentioned that the selection of indicators was always going to be delicately poised between the requirements for policy relevance, sensitivity and responsiveness[2] on the one hand, and for efficiency and feasibility[3] on the other.

[1] This is a common aim for each of the topics identified by Sibis,.

[2] *policy relevance* can relate to the issues such as whether indicators are / will be relevant for the current EC policy making, in particular for eEurope action lines, and for better understanding of the Information Society in the EU in genera, while from their responsiveness [to policy interventions] allows policy makers to fine tune and plan their interventions.

[3] *Efficiency and feasibility*: apart from the cost- benefit assessment (i.e. expected benefits of including variables and usefulness of indicators that are generated from them) another issue need to be considered - not all indicators and not all topics lend themselves to survey research. This fact had also influenced the choice of suggested indicators , and subsequently , variables to be suggested.

# Executive summary and overview of Topic indicators

In the topic expose, it was sought to capture the diversity regarding the perspectives that the Topic can be approached from, reflected and contemplated upon.[4] Thus a relevant starting point is the perspective concerning the theme of continuity between traditional social inclusion and info-inclusion. This perspective also provides a link with the next step undertaken, that is to say, with identifying sub-topics suitable for creating indicator typologies that would be also useful for the subsequent work. In relation to this - showing the way forward for the subsequent work - we sought to identify subtopics in such a way that would both capture the existing indicators, but also provide us with logical paths for the generation (including operationalisation) of the novel and innovative ones.

Thus three sub-topics have been identified – the first one was already mentioned above and was concerned with the detection of vulnerable groups and individuals at risk from info-exclusion and as such was inextricably linked with our perspective of continuity (and perhaps, and hopefully, change) between the traditional social inclusion and its digital counterpart or, unfortunately, complement, namely info-inclusion.

The second sub-topic considered the issue of *access*, conceptualised to comprise nominal access, accessibility and user interface design, access awareness issues and affordability. In line with eEurope action, the issue of accessibility was here probably prioritised the most, both in terms of general user friendliness and in terms more specific accessibility issues related to certain groups of people with special needs and requirements. The third and the final subtopic sought to bring together the concepts describing rationale for participation in the information society. Here we do not necessarily mean the choice whether to *participate* or not (since this choice often does not exist as such for all, although it may be relevant for some self-excluding individuals), rather we wanted to see what factors and issues will allow, support, enhance and sustain this participation. Therefore we have looked at the issues (and indicators) relating to the content that has been provided on the Internet, as well as to the perceptions about usefulness of participating in the Information Society. It was expected to find that this subtopic will also be relevant for some more specific policy initiatives focusing on avoiding info-exclusion expected to be arising out of eEurope action lines, namely action 6.1 of "participation for all in the knowledge-based economy".

It is also worth noting the common theme that is discernible throughout more or less all subtopics identified. This theme concerns the identification of gaps in individuals' and groups' proximity to, the level of involvement with, and the benefiting from the Information Society. This theme provides a base for most of relevant indicators, usually expressed in relative terms, such as differentials in access, awareness, usage and the potential to benefit from ICTs[5]. The relevant indicators, together with sub-topical structure is presented in Figure 1 , page 3.

Finally, while the topic report is written as a 'stand-alone' document, the fact that it represents an integral part of the [sibis] project cannot be overemphasised. This fact had some crucial; implications regarding the scope of coverage, the delineation relating to the other [SIBIS[ topics, e.g. Telecommunication & Access, Work & Employment & Skills, Education and e-eGovernment. Best efforts were made therefore to avoid redundancy and overlap, and coverage was led by the overall project objective too, and it was attempted to focus on info-inclusion indicators and related issues as "exclusively" as it was deemed feasible.

What can be inferred from our expose of the topic of social inclusion and the information society or info-inclusion is the lack of representative and widely available data and indicators that can be used to adequately capture this increasingly relevant topic. This is even more so

[4] This analysis follows the initial approach originating from the previous work (WP1), where the four perspectives were highlighted.

[5] It is expected that this theme will remain relevant for the subsequent work to be undertaken in D2.2. and in subsequent workpackages.

the case regarding the [lack of] European wide data, where perhaps somewhat ominously, policy makers have even relatively less of these measuring tools available at their disposal, the tools that are necessary to deal with this important challenge of the Information Society.

**Figure 1. Sibis indicators overview - Topic social Inclusion and the Information Society**

| Thematic Domain | Sub-domain | Selected SIBIS indicators | Piloting in SIBIS |
|---|---|---|---|
| ***Social Inclusion and the Information Society*** | Identifying vulnerable/'at risk' groups and individuals[6] | • Use of ICTs by 'traditionally' disadvantaged groups in society (using various socio-demographic variables) | SIBIS GPS |
| | | • Regional disparities in use of ICTs (e.g. ICTs in localities of different size bands) | SIBIS GPS |
| | | • Usage of ICTs by ethnic minority groups | — |
| | Access – nominal / physical access | • Differential levels of access in terms of speed (broadband/narrowband) | SIBIS GPS |
| | | • Individual perceptions regarding the access possibilities for using the Internet | SIBIS GPS |
| | Access – skills required | • Individual perceptions regarding the level of skills required for using the Internet | SIBIS GPS |
| | | • Ability to source information on the Internet | SIBIS GPS |
| | | • Ability to utilise Internet-based/ associated modes of communication | SIBIS GPS |
| | Access – accessibility ( of the Internet), as prioritised in relevant eEurope action lines | • Corporate website accessibility for people with disabilities /special needs | SIBIS DMS |
| | | • Corporate website adaptability to special needs/user requirements | SIBIS DMS |
| | | • Corporate website being developed with regard to Web Accessibility Initiative | SIBIS DMS |
| | Access – awareness / skills | • Perceptions regarding the ease of access to the Internet | SIBIS GPS |
| | | • Usage of PIAPs/free Internet access points | SIBIS GPS |
| | Access – affordability | • Perceptions regarding affordability of Internet access at home | SIBIS GPS |
| | Rationale for participation in IS | • The spread of virtual communities/civic networks | — |
| | Perceived benefits of participation | • Perceptions regarding usefulness of the Internet for an individual | SIBIS GPS |
| | Sustainability of participation in IS | • Share of Internet drop-outs (persons who used to have Internet access at home) | SIBIS GPS |
| | | • Assessment of detrimental impact of not having access to the Internet on individual's perception regarding social enfranchisement | SIBIS GPS |
| | | • Ability to provide information about self over the Internet via creating personal webpage | SIBIS GPS |

[6] Although broadly similar to classic indicators aimed at identifying the individuals and groups at risk of traditional exclusion, these indicators are nevertheless necessary to fully examine the digital dividing lines.

| | | | |
|---|---|---|---|
| | | • Degree of Internet-based networking amongst friends and relatives | SIBIS GPS |
| | | • Diffusion of the Internet in voluntary/NGO sector | — |

## *0.1 Description of work tasks and structure*

The bulk of work undertaken to produce this report is best summarised as an extensive literature review of all documents relevant for the topic of Social Inclusion and the Information society. The documents surveyed included policy documents (both aspirational and rather concrete action plans) at various levels (EU level, national – Member States, supranational, "leading nations for the purpose of establishing perimeters for benchmarking, etc.) and policy relevant statistical reports. In addition, relevant books on the topic were also consulted.

Principally, these documents were consulted in order to ascertain the aims of policy makers and to gather relevant indicators that are currently used to capture the topic. In addition, we consulted the reports and general literature that offered critical and up-to-date views of (some aspects of) the topic under investigation.

Work tasks also included ascertaining the aims of the above documents, a brief evaluation of selected indicators from them, all with the aim of aiding of appropriate setting of the framework . In relation to this framework, it was sought to provide a logical picture of the topic, and three stages of the work can be distinguished. Firstly, the relevant policy documents were examined, with the emphasis being put on those that were not elaborated or available in the previous work[7]. One of the main objects here was to ascertain policy makers' concerns, their perspectives on the topic and the intended way to proceed in relation to achieving improvements. Then, and in parallel to this, available statistical reports and similar academic works from various sources were examined with the aim of identifying relevant indicators currently used and being developed. The above provided inputs into the process of grounding and developing innovative indicators. This process was envisaged to take place in a structured way, namely, seeking to follow the pattern bellow and distinguish the following levels:

- Topic level (e.g. "digital inclusion")
- Sub-topic level (e.g. access [suitably defined in broad enough terms])
- Constructs / concepts: terms for theoretical concepts which can not be measured directly (e.g. accessibility) but have to be operationalised via indicators into various dimensions that are capable of capturing key aspects of the construct in order to complete their operationalisation into
- Indicator variables, being the lowest level in this process.

This report is structured as follows: Section 1 presents the Topic framework that represents a base for the development of new indicators in the area. It builds on some of the main findings from the literature paying attention to policy agenda as well as other topic relevant issues and outlines the issues pertinent to the Information Society / ICTs and social inclusion. The section also outlines the main relevant perspectives and presents the sub-topics structures. Finally, it offers a brief rationale regarding the need for innovative indicators in this area.

Section 2 presents Sibis indicators on social inclusion and the information Society, charting the indicator typologies derived from sub-topic structures. It lists some indicators most likely to feature in Sibis survey and offers a summary of these indicators.

Appendices provide useful reference points. Thus Annex I ( subsection 3.1) offers a broad overview of policy documents from supranational (e.g. the EU, UN) organisations and geo-political entities. It was sought to offer an extended, issue based review, rather than offering just a simplified annotated bibliography. Annex II (subsection 3.2) complies the existing

[7] E.g. workpackage 1, relevant reports available on sibis website.

indicators and indicators in development that are relevant for the Topic, together with relevant data sources. Finally Annex III (3.3) revisits some methodological issues pertinent to the Topic research.

# 1 A framework for the development of innovative indicators for the topic of social inclusion and the Information Society

## *1.1 Aims of the framework*

The main aims of the framework could be summarised as follows. In the first instance, it is seeking to examine the area of, and the issues relating to social inclusion and the Information Society, or more precisely, what is now referred to as *digital inclusion, info-inclusion* or *e-inclusion* (these terms might be used interchangeably throughout the document). It examines in authors' view, relevant contemporary perspectives on it arising mainly from the research conducted into this area, together with the contemporary policy concerns in relation to it ( subsection 1.2.2 )

Furthermore, it investigates statistical indicators for which data are already available but also seeks to identify those reports that are piloting and using novel or (using SIBIS terminology) the *innovative* indicators. The latter can also be seen as examining the indicators that are in the process of being developed, piloted, and subsequently used in future. While it is beyond the scope of this report to (re)define the concept of innovative indicators anew, it will suffice to outline that they include completely new indicators (e.g. can be constructed from proclaimed policy aims / aspirations, relate to new ICTs and or new uses of ICTs), can be first time constructed EU–wide innovative indicators (that can be built from the appropriate low level, 'national indicators), as well as improved versions of the existing indicators, and originating from those being piloted in diverse settings and different methodological frameworks. All of the above provided inputs for Sibis indicators on inclusion and information society.

Sources for indicators are official statistics collected by international organisations such as Eurostat, OECD and United Nations bodies; official statistics collected by the EU Member States (mainly for the purpose of benchmarking) but also from NSI outside the EU (e.g. the US); and primary statistics originating from surveys and reports that are conducted by or on behalf of organisations other than statistical agencies (e.g. EU projects, commissioned projects, and independent academic projects). *Most of the existing indicators are placed in Annex xxx)*

Finally, arising from the above steps, the framework provides logical paths and structures for creating indicator typologies and indicator generation, as well as by identifying innovative indicators. This is mainly done via identifying relevant subtopics and subsequently, lower levels points on this ladder (from subtopics identified as comprising the Topic, down towards indicators), setting the stage for the work to follow[8] primarily by pointing the way for developing indicator variables ie. 'operationalisation' of relevant concepts.

## *1.2 Social inclusion and the Information Society framework - setting the scope*

At the outset, it is useful to offer a brief outline regarding the initial delineation of the Topic of social inclusion and the Information Society. In the first instance, there is a need to delineate if from the general social inclusion and its broad agenda. The sheer breadth of the topic of social inclusion in general, coupled with its indivisible relevance for the topic of inclusion and the Information Society i.e. info-inclusion or digital inclusion, inevitably has a considerable

[8] I.e. corresponding section of deliverable 2.2 , which has been included in the integrated version of this report.

bearing on the way in which this topic has been delineated [9]. This report in general, and specifically, this framework does not intend to cover the whole spectrum of statistics in the wider field of [general] social inclusion, nor would this be possible given its scope. However, the topic report still has to be sensitive to all issues relevant for social inclusion in general, especially to those demonstrated to be impinging upon, and are pertinent to the area of info-inclusion, not least because some 'secondary' indicators relevant for social inclusion in general are unavoidably required for the topic of info-inclusion. We here primarily mean the 'traditional' indicators necessary for identifying the individuals and groups that tend to be at risk from being excluded are unavoidably required for the topic of info-inclusion[10]. It is worth mentioning at this point that, indeed in principle, it would have been possible to consider info-inclusion as being a subset of a broader [general] social inclusion agenda, where it

*Vignette 1. 'A digression' - Defining general social inclusion and implications for digital inclusion*

*It is useful to put forward the view of what social inclusion in general means and what does it signify in the contemporary discourse in order to be able to fully appreciate all relevant implications for inclusion in the Information Society. Social inclusion in general should be conceptualised as a complex, context-dependent social phenomenon that is discernible and definable at various levels. First of all, it is defined in terms of proximity, most often in terms of a "distance" or a "gap", which is most visible in either social or economic terms, with the corresponding consequences arising out of these 'gaps' or differential positions. Secondly, it can be defined in terms of a sense of belonging or positive reciprocity, which is discernible in terms of having positive interactions with the rest of society. Thirdly it can be defined in terms of the process that is conducive to the enhancement of capacities, capabilities, and competencies of groups and individuals.*

*On the other hand, the 'flip' side of social inclusion is social exclusion, which usually relates to those individuals and groups of people whose ability to fully participate in society is severely or noticeably curtailed, with accompanying negative implications for their quality of life. For the purpose of simplicity and consistency, it is[1] defined as an opposite of social inclusion – it is most readily discernible in terms of a distance or a gap, it negates a sense of belonging and creates a sense of alienation, and it can also be seen as a process that adversely affects particular groups / individuals in a society. It is manifested when individuals and / or group(s) of people are experiencing (usually a combination of linked) problems such as unemployment, poor skills, low incomes, poor housing, bad health or similar negative outcomes in relation to other groups in a society, or at a higher than average rate then other groups. The normal cause and effect path does not apply to the concept of social exclusion: its causes are interconnected, and its effects themselves become causes of further exclusion - for example, poverty is both a key cause of social exclusion and a key effect.*

*It is contended that it is important to get a full grasp of, and achieve consensus in relation to defining "general" social inclusion in order to appreciate the issues relating to inclusion in the Information Society, or "digital inclusion" fully. While the above principles and guidelines for conceptualising and understanding social inclusion in general will be also relevant for our expose of digital inclusion, especially in terms of relevant perspectives and identification of those at risk from exclusion, our main discussion will have to be focused to the area of digital inclusion.*

could be considered as an additional 'avenue' of exclusion. This might appear logical, given the need to consider these so called secondary social exclusion indicators. However, given the scope and the aims of the report, it is decided to focus on the info-inclusion primarily. This is then the first level of delineation required.

Consequently, the second level of delineation was also required due to the horizontal nature of the Topic of digital inclusion. Here we mean the delienation relating to the points of tangency

[9] As outlined briefly in WP1, and revisited in the vignette 1.

[10] Empirical findings in the area of digital inclusion do indicate that the majority of the individuals and groups that are at risk from being excluded in a traditional sense are also less likely to be included in the Information Society, and this is the issue to which we shall return later.

in relation to other SIBIS topics, namely Telecommunication & Access, Work & Employment & Skills, Education and e-Democracy part of eGovernment (focusing on citizens' participation and interactivity with certain parts of administration). While some overlap in indicators covered was inevitable, it was attempted to focus on info-inclusion indicators and related issues as "exclusively" as it was deemed feasible.

### 1.2.1 The framework structure

The framework is structured in the way that offers a multi-perspective view on the topic on the one hand while also offering the paths for the grounding and subsequent development of the indicators aimed at capturing this Topic (via fragmenting it in into subtopics) on the other.

The rational for fragmenting the Topic was into sub-topics was based on providing structured pathways of innovative indicator development, but also for gaining a better grasp of the indicators designed and used to encapsulate and capture this topic. This process is also conducive to exploring additional uses for some of the existing indicators.

### 1.2.2 Main perspectives on digital inclusion

It is suggested that the area of digital inclusion can be perceived from at least 3 relevant perspectives – the first one is the one highlighting but not 'seeking' to retain the *continuity* with general social inclusion , the second one focuses on the *opportunities and threats* arising out of the potential of ICTs to be employed to the benefit of all, and at the same time, of failing to do so, while the third one relates to the issue of interactivity.

#### *A continuity and / or change perspective on info-exclusion*

This perspective on digital inclusion arises out of its linkages with traditional social inclusion arena and following on from the above, the first set of issues to contend with will be the relevance of *traditional* social inclusion indicators and concepts for the investigation and capturing of digital inclusion. What is an issue here is whether (and more often, to what extent) there has been a *continuity* between the way people found themselves on the margins of the Industrial Society[11] and their recent and current position in relation to the Information Society. Of course, from the critical social theory point, the advent of the information society and associated socio-economic changes and challenges in itself might be seen as having some negative connotations for social inclusion, which inevitably results in a sizeable number of people being unwilling or unable to use or gain access to new ICTs. This viewpoint has been reinforced, at macro level, with perceptions that the advent of the Information Society has apparently coincided with the decline of a welfare state and the growth of regressive taxation[12], which is another issue to be aware of.

It is worth restating that the core issue of this perspective is the contention that those at risk from ["traditional"] social exclusion are also more likely to suffer info-exclusion or exclusion from the Information Society , or at least be more at risk of being info-excluded. This in turn represents the continuity aspect in relation to the topic of info-inclusion (and info-exclusion). The issue of continuity in this regard has been well captured by Mansell and Steinmueller (2000), who have asserted that:

> *Any analysis of social exclusion in the use of the Information and communication infrastructure must consider how mechanisms of [existing] social differentiation*

[11] Defining industrial society would be beyond the scope of this report – we shall for simplicity take it to denote pre-information society, leaving aside the debates regarding the unilinearity of social development in a wider sense.

[12] Freeman and Soete, in Mansell and Steinmueller, 2000.

> *confer advantage, and simultaneously disadvantage, on some people and not others, forming a basis for new inequalities to emerge. (:51)*

Therefore, the focus (or indeed the starting point of analysis) should be on those groups and individuals already disadvantaged and on those at risk from being disadvantaged. Indeed, the majority of the reports and documents on the Topic reviewed deal with the categories of groups and individuals that can be, and we ask to be forgiven for using a non-academic language, referred to as the "usual suspects" in terms of social disadvantage in general. These categories *include* all traditionally vulnerable groups – people with disabilities, people on low incomes and from households of certain structures (e.g. a single parent households), the unemployed, people with relatively low levels of skills and education attainment, people with literacy difficulties, people belonging to race and ethnic minority groups, and people living in remote rural locations, and [especially some strata] of the senior citizens. It is reasonably safe to assume that these categories will overlap to some degree. Basically. the focus is on the people with little or relatively less opportunity to access and benefit from new ICTs, and on those where the benefits of doing so appear less discernible.

The above categories and groups of people were more likely to be disadvantaged previously in the so-called industrial society and thus have become the main concern of policy makers and researchers when it came to the prospect of participating in, and benefiting from the Information Society. This is consistent with the aforementioned assertion that it is possible to notice a definite continuity between the general social inclusion and "digital" inclusion, at least in terms of individuals and groups being effected.

The above issue is relevant for indicator development and usage in the SIBIS, since the indicators developed and used (and under development / innovative indicators[13]) for detecting and understanding the pre-existing disadvantages and general exclusion pertinent to the above groups will still be relevant for this Topic. These 'secondary' indicators include all relevant demographic indicators, particularly education and skills indicators and age variables, employment / unemployment indicators, income and related indicators, indicators aimed at detecting the presence and levels of intellectual or physical disability or long term limiting condition, and location of residence. These will then need to be used in conjunction with the indicators aimed at measuring the level of participation (and proximity) of these groups and individuals in the Information Society. This in turn will allow to ascertain whether, and to what extent there is a continuity between digital inclusion (or exclusion) and some relevant aspects of its "traditional " or general counterpart. Equally important, these indicators are necessary for ascertaining the presence and extent of digital exclusion amongst the above individuals and social groups.

It is of course possible to detect other aspects of *continuity* with traditional social inclusion such as the possibility to understand info-exclusion it in terms of interplay of causes and effects. Info-exclusion is, just like social inclusion in general, still inherently a social process in which causes and effects are hard to separate. This is visible at few levels - initially, the original exclusive nature of the way in which ICTs have been designed have resulted in their less than wide or non-universal uptake. Then while implementing and commercialising technologies that are by their very origin somewhat *alien*, at least to some groups, [14]have caused them to become *excluding* in nature. In other words, their impact and effect, once implemented was to exclude certain segments of population. Or, in other words, the *effect* of implementing ICTs was to exclude some, while the prevailing socio-economic (and political) conditions have *caused* that such a design and implementation process have developed and taken place in the above described way.

In summary this perspective also offers some strong justification in relation to the focus of research, which is being put on vulnerable individuals and groups and which thus seeks to consider (as much as possible and feasible) all traditionally vulnerable individuals and groups in terms of their participation in an information society. The perspective draws the attention to

[13] Indeed, no matter how sophisticated and innovative indices are, the majority of them will still need to include traditional and demographic indicators as their integral parts.

[14] Some sociologists hint that the reason for this is the lack of appreciation of the fact that technology is socially embedded.

the likelihood of the "old" and existing social divisions (or analogously, the divisions originating from the Industrial Society) being maintained, reproduced, and / or reinforced in the Information Society.

The empirical evidence thus far tends to support the essence of the statements made above, as well as the rational for the perspective. Thus in Europe, despite growing Internet penetration overall, the levels of access to it and its usage rates are skewed towards those relatively socially and economically more advantaged individuals. Thus new Eurobarometer data on ICTs use show high correlation between higher income and social ranking of individual and their possession and usage rates of computers and other ICT appliances: in June 2001 only 19% of the low income group, but 57.3% of the high income group were using the Internet. At the same time, the share of Internet users has been increasing much faster among high-income groups: 10% of the high-income groups versus 3.5% of the low-income groups, between November 2000 and June 2001. (Eurobarometer data, also reproduced in the Prisma Project) .

In the US, similar trends have been detected. Despite some measurable progress in terms of Internet access and computer ownership for almost all groups vulnerable to e-exclusion, however, the digital divide along the income level, educational background, race, age, household type and the presence of disability lines still persisted and / or remained relevant ('Falling Through the Net' series of reports, 'Falling Through the Net: Toward Digital Inclusion' ,2000) [15]. Thus while data showed that the overall level of digital connectivity in the US has been rapidly increasing (previous reports were used to provide a longitudinal data) with the share of households with Internet access being increased by 58%, rising from 26.2% in December 1998 to 41.5% in August 2000, with more than half of all US households [51.0%] having computers, up from 42.1% in December 1998, the findings showed that large gaps also remained regarding Internet penetration rates. For example, people with a disability were only half as likely to have access to the Internet as those without a disability - 21.6% compared to 42.1% and while just under 25% of those without a disability have never used a personal computer, close to 60% of those with a disability fall into that category (ibid.). Gaps were also found among households with different racial and ethnic origins, and more worryingly the relative gap (in relation to national average) has widened for some disadvantaged groups indicating potential danger of digital divide persisting for some time and reinforcing the existing social divides.

Empirical evidence, however limited, especially in Europe, shows that people with disabilities still suffer from experiencing a hindered access to the Internet, mainly due to lacking basic Internet tools which is traced to the limited investments in assistive technologies development and to the earlier mentioned original exclusive nature of web design. Current developments in the US suggest that Internet access for people with disabilities should improve markedly there over the next few months as federal agencies are making their websites, software, and other sources of data and information fully available and accessible to this group. The cost associated with achieving this is estimated to be between USD 85 million to USD *691* million[16]. Similar movements have been visible on this side of the Atlantic, with improvements of access for people with disabilities being prioritised by the European Commission in eEurope 2002. Internet accessibility goals in this document are also stated with a particular regard for people with disabilities, aiming to make all public sector web sites and their content accessible, ensuring that citizens with disabilities can access information with as little hindrance as possible. This should in turn boost their interactivity rates with various public bodies and thus allowing them to use the information provided more effectively.

Or to take another example, many will agree that the process of digital inclusion starts early and at the individual level this can be said to be in education. In California, research has shown that the original process of social deprivation has caused some schools to become info-excluded, while their incumbent disadvantaged position is also the effect of this process. Furthermore, their lack of ability to access the info-inclusion initiative, the [E-rate] programme which was designed to tackle the digital divide amongst schools, could be traced to their lack

[15] *T*he extent of digital inclusion was measured by looking at whether households and individuals that have a computer and an Internet connection

[16] Nua Publishing, 2001.

of resources and know how to apply for the fund in the first place[17], and the effect was their resulting and remaining disadvantaged position.

### *Opportunities and threats / barriers perspective*

e-Inclusion (and the Information Society itself) can be also considered in terms of opportunities and barriers (or threats) and is discernible in work of many writers on the topic, as well as being present in most relevant policy documents. Thus opportunities and threats / barriers perspective is visible in the European Disability Forum's document (titled *EDF response to the 1999 telecommunications review*, 1999*)* which states that it [the Information Society] offers a potential for achieving full integration of people with disabilities (e.g. via assistive technologies), while on the other hand can create, maintain or reinforce the process whereby their full and meaningful participation in society has been hindered. The same can be said for, say people living in remote rural areas, or indeed any other groups identified earlier as vulnerable to info-exclusion. This issue is becoming more relevant since the Internet has gained more prominence in each sphere of daily life, becoming an ever increasingly important source of information (general, specific, user focused etc.), and one of the main communication outlets today, but also a commercial & business tool.

### *Interactions perspective and its relevance for info-inclusion*

The relevance of interaction in relation to info-inclusion should not be underestimated. The message is probably best brought home by the research undertaken in relation to the impact of one particular facet of ICTs on social capital[18]. Social capital in this instance has been conceptualised as the "social trinity" comprising of networks, norms (e.g. of reciprocity) and trust that enables individuals to act together and pursue shared objectives more effectively, in order words to pursue a constructive civic engagement. A direct parallel was drawn between the observed decline in civic engagement / decline in social capital in the US, and the arrival and rise of television and associated technologies i.e. increasing levels of TV / video viewing. Therefore, it was suggested that the most likely culprit behind the perceived decline in social capital was this non-interactive technology application - television. Ominously, the categories of people that are more likely to be at risk from social exclusion in general have been found to be relatively more adversely affected by this development.

However, and consistent with our earlier identified perspective of the information society as offering both opportunities (as well as presenting threats) many observers now feel that while ICTs can at least be used in such a way to avoid an adverse effect on social capital, there is a potential to reverse the perceived decline social capital, and in many cases, to positively contribute to its advancement. The scope is of course much broader then the interactive TV now in ascendance, having the above research in mind. The most relevant course of action here would concern using computer networks & Internet to build and support "virtual communities"[19]. Despite some deficiencies of such "pseudo-communities" or "non-place communities" associated with their lack of essential features of "real " communities, there seems to be an agreement that the potential for this course of action in relation to enhancing social capital has already been well grasped and utilised.

However, the main issue that makes the difference seems to be still rather elusive to many, or at least was not clearly stated. It is contended here that this issue is *interactivity*. In the first case ( in Putnam's research), the lack of it was associated with a perceived decline in social capital, while in the second (more recent studies of virtual communities), its presence was deemed crucial and necessary for its rejuvenation. True, research shows that virtual

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[17] Another reason was a limitation in the purposes for which the fund could be used (effectively only covering the installation of the Internet and for obtaining discounts on phone services) thus not covering the basic computer hardware and software equipment and technical support. ( '*Is E-rate Enough'*, 2000)

[18] Putnam, R. D. 1996, The Strange Disappearance of Civic America.

[19] The concept first introduced and elaborated by Rheingold, 1993.

communities[20] are better suited for strengthening and enhancing the bonds of the existing communities but there is also now a potential to interweave them into social fabric with a greater ease. The case in point are community information systems, or civic networks as they are known in the US, usually bringing together local institutions such as schools, universities, local government agencies, libraries, NGOs and non-profit organisations. The positive impact of these networks on social capital has been documented in the US [21], reinforcing the earlier contention that virtual links work best in conjunction, and when co-ordinated with more "real", already existing linkages. Of course, there is always a danger (and we need to be aware of it) that social isolation can increase with the increase of Internet usage, thus reducing traditional participation in communities[22]. However this should not (at least not always!) be the case if the Internet is used for community purposes, that is to say if the Internet usage is an integral part of community existence and operation. The concept of interactivity via ICTs (e.g. the interactivity with government / administration, public services, administrative bodies, etc.) has become increasingly in relation to participation and inclusion into the Information Society

Thus the concept of interactivity and user engagement in broad terms is also relevant for using ICTs as effectively enabling tools which can be, among other things and in addition of preventing digital inclusion, be also used to combat [traditional] exclusion. A case in point could be the EU Commission's commitment to ensure that people with disabilities can use public services on-line, and one of the main aims here is the achievement of higher level of *interactivity* in regard to these services, which in turn will reduce the level of info-exclusion for this group. Given the aim to achieve a high level of government services offered online, it is important to monitor the suitability of online services for interactivity, particularly with people with disabilities in mind. While a universal acceptance of the "Design for all" principle would be a hugely beneficial policy aim, the progress towards this aim is still insufficiently monitored. Although most of the policies "targeted at people with disabilities tend to be a subject of specific policy evaluation this could also be the area that can benefit from some 'mainstream' evaluation i.e. it can be evaluated as apart of overall e-inclusion agenda.

### 1.2.3 Digital inclusion subtopics

This subsection section will outline subtopics most directly related to indicator generation paths. Three main subtopics have been identified, outlined below ( also illustrated in Figure 2-1. Approach to the topic- an overview of indicator typology and a path for indicator generation).

*Identifying the individuals and groups at risk from info-exclusion*

Two main sets of concepts are relevant here. The first set relates to the so-called traditional indicators that have been relevant for identifying the individuals and groups at risk from being socially excluded. The second albeit related set is concerned with relevant ICT skills, that is to say, the degree in which these are present among various groups and individuals.

*Traditional ( secondary) indicators relevant for social exclusion*

These indicators will not be elaborated here in great detail, since that would go beyond the scope of this report. They are in broad terms, socio-economic determinants of individual circumstances and relate to (and are not limited to) employment status, income, education level, age, race / minority group membership, presence of a disability or a special need, location of residence and so on.

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[20] The emphasis here is on community side , i.e. we are leaving aside the business-oriented virtual communities. The point has been made by a work by Rheingold ( e.g. 1993) on what can in present context be termed 'communities on line'.

[21] Rand Corporation study of five community networks.

[22] As implied in the *Internet and Society*, SIQSS, 2000.

*Skill related preconditions / requirements for participation*

*ICT Skills* are the necessary precondition for the meaningful involvement, participation in and benefiting from the Information Society and related developments. Although primarily and necessarily related to the individuals and their possession (or lack thereof) of the relevant skills, the concept of skill possession and the whole process of skills being imparted upon can , in the abstract way, also be related to households, social groups, and communities / neighbourhood areas. That is to say, they can also be grouped according to their skill level acquisition and possession and the outcomes are also discernible at each of these levels. Thus although the main emphasis is the skill-resources at the individual level it is possible to look at this issue as a characteristic of some social groups.

While the necessary ICT skills can also be conceptualised as a part of access to the Information society in broad terms and operationalised as "ability to use [ a particular] technology" ([23]"), this can also be seen as somewhat simplistic, since the concept of relevant ICT skills depends on education and literacy levels (these two are positively related to each other). The coverage of skills as ability to apply knowledge and to make use of ICTs with the aim of effectively and efficiently participating in the Information Society, particularly in relation to enhancing employability as a way of ensuring social inclusion through this channel has been covered by the project elsewhere[24]. Likewise, the main relevant aspects of (youth) education covering, among other things, ICT related curricula are also dealt with [25] and therefore it will not be attempted to cover these in this section in any grater length. However, we can also think of skills and education in terms of their relevance for social capital, that is to say, that aspect of social capital relating to the enhancement of individuals' and groups' ability to pursue beneficial civic engagement[26]. Furthermore, we might also want to include the citizens' participation relevant skills (as citizens, consumers, etc) for pursuing the individual, as well as community and public interest. Overall, we need to think of skills in a wide sense comprising also general communication skills rather than purely technical skills relevant for [certain aspects of] PC and / or Internet usage.

## *Access to ICTs– nominal access, accessibility , awareness and affordability*

Despite the astonishing growth and diffusion of the Internet since the early 1990s, many citizens still do not have an easy access to ICT tools, whether we are talking about access to personal computers, and associated hardware & software, or to the Internet itself. Access to ICTs is an issue that is of relevance for individuals in all walks of life - at home, at school, in work and in the community at large. It has long being recognised and we often hear that the individuals, groups and communities whose access is hindered are automatically at a disadvantage. However, it is seldom elaborated upon the issues that hinder a full *access*. It is at this point necessary to unpack the general concept of access that regularly feature in statements (like the one above) in order to fully appreciate the real proximity (and crucially differential levels of this proximity) of certain groups and individuals to the whole concept of the Information Society.

Access is then here approached in a broad sense, surpassing although inevitably comprising the access defined in narrow terms or what is referred to as 'nominal access' [27]. Having a broader perspective tends to make the process of defining the concept at hand that much more difficult. However, it is useful at this point to delineate access in these terms since it is extremely relevant for the Topic. In its broader sense, access could mean a conflation of nominal / physical access to the Internet and PC with the ability to use the related technology

[23] Information Society Commission, *IT Access for All*, 2000.

[24] Topic report on Work, Employment and Skills.

[25] in the relevant topic on Education

[26] True, there might be some overlap here with eGovernment topic if civic engagement is defined in terms of e-democracy and pursued in greater detail, just illustrating the horizontal nature of the Topic.

[27] Access in a more technical sense has been dealt with in a separate topic of this workpackage, Telecommunication and Access.

itself, as well as the availability of technical support enhancing it[28]. Going a step further in would also include measures assessing the effectiveness of access, that is to say, assessing it in a qualitative way - how effectively it can be used, the awareness and benefits of having access. Indeed many now agree that the issue of nominal access is only a part of the *access* and that [purposeful] utilisation of ICTs is its indivisible part, while its contribution to the increase in general level of knowledge is also an issue to contend with. The two latter themes that can be a part of the *access* conceptualised in very broad terms will be dealt with in subsequent sub-topics. Let us now focus briefly upon the way access was conceptualised in terms of being a sub-topic of the Topic under investigation.

In relation to the *access* as a separate, stand –alone sub-topic, one should note the multi-layered notion of this term. At the first level, we have a *principal access*, since the access is instantly related to physical and nominal access to technology. The examples of this include: having an access, in principle, to the technology itself (i.e. computers, Internet connectivity, PC equivalent Internet connectivity at home, in the workplace or in public places. Although a necessary and often a crucial first step, it has already been recognised that obtaining a principal access does not automatically translate into the inclusion into the Information Society. The access defined in this way can then be thought of as a (basic) precondition for "equality of opportunity" for participating in the information society. In addition, and also illustrative of the statement above, access opportunities are not qualitatively equal and one needs to be aware of a need for a nuanced approach here, i.e. the need to recognise the differences between home access and for example access at a community hall, public library, Internet café or similar.

The above recognition notwithstanding, the concept of access limited to the above issues is still too narrow and needs to be expanded by conceptualising *access* in such a way to include various *accessibility* issues, and this can be seen as another layer of this sub-topic. Relevant issues here are the ease of access and categories of access in terms of breadth of its audience. Furthermore subtopic of access includes *affordability* of access, and finally, the sub-topic *access* also includes the *awareness*, namely in terms of access opportunities but at another level in [the awareness of] resulting and potential benefits from availing of it.

It is therefore proposed to adopt a concept of access that contains four 'A's – Access nominal (narrow sense), Accessibility, Affordability and Awareness. It is useful at this point to elaborate on some of these items in more detail.

Accessibility includes, at the first instance, the issues such as the convenience of access to PCs and the Internet that individuals have. Thus the access can be home or workplace based (most frequent), it can also be a mobile and it can also relate to accessing the physical buildings where the above such ICT technology is available to the general public (e.g. government sponsored access-enhancing initiatives such as availability of *public internet access points – PIAPs*[29]). Physical accessibility of buildings that provide access to the general public can be particularly relevant for people with disabilities. At another level, accessibility relates to the ICT (Internet and web) accessibility where one should distinguish between the extent of adoption of Design for all standards that allow everyone and people with disabilities in particular to effectively use the Internet and / or equivalent means of communications and relevant ICT tools. This part of access sub-topic can also be called Internet accessibility or *user friendliness* in this sense. This issue relates to the notion of taking into account the different needs of the "end-users" with the overriding principle that all citizens should be participants in the Information Society. It is these two intertwined issues that we now turn to.

Let us first remind ourselves of some basic facts about the Internet that are relevant for accessibility. The World Wide Web has become the dominant Internet tool. Essentially, the

[28] Indeed, this would then correspond with the conceptualisation of access as adopted by the Information Society Commission Ireland.

[29] The EU Commission is monitoring the availability of public internet access points (PIAPs) as one of the indicators of "digital" inclusion. Currently, (Eurobarometer) there is less than 1 PIAP per 10,000 EU inhabitants (the main indicator monitored). In the Irish national context it has been proposed to measure % of the population within a 3-mile radius of public internet access point (PIAP), together with measuring general social e-inclusion by gauging % of community and voluntary sector using the Internet. In addition, it is envisaged to measure basket of network / usage cost.

Web combines hypertext and multimedia and it relies on these building blocks to achieve versatility and reinforce the power of its message regardless whether it is intended for educational, government, or commercial purposes and resources. Most observers will agree that being, in principle, such a versatile medium has attributed to the Internet's current power and omnipresence. However, and probably due to the original exclusive nature of this medium, its design has not always been aimed at the *universal* viewer / user.

Thus in relation to people with disabilities, it has been acknowledged that some users / site visitors cannot see graphics (people with visual disabilities), hear audio links (people with hearing disabilities), or that some can experience difficulties while trying to use sites that are not universally designed (e.g. people with learning disabilities, but also people without disabilities who possess relatively low ICT skills and who do not possess adequate knowledge or command of the language in which the website is written). Therefore, in summary, ensuring the equivalent content is of paramount importance for this vulnerable group, that is to say, the primary content has to fulfil essentially the same function for the person with a disability as it does for the person without any disabilities. The main emphasis is on providing equivalent information and making (digital) documents accessible to people with disabilities. The issue is also relevant for people who have trouble navigating sites (either due to the poor organisation of sites or to their linguistic and other dexterity-related difficulties) or who simply have outdated equipment /connections.

The provision of equivalent content is now achievable since text content can be displayed as synthesised speech, Braille and visually displayed text and we can distinguish between text equivalents (for graphic and audio information) and non-text equivalents (e.g. an auditory description of graphics, sign language translations). Some of the most frequent changes that are required relate to "all text" descriptions of graphics on the web pages, where screen readers (devices required that can read the text for / by people with visual disabilities) can then be used i.e. their use enabled and facilitated.

The crux of the strategy ensuring accessibility is based upon the adoption of Web Accessibility Initiative (WAI) guidelines and it was undertaken to review relevant legislation and standards with the aim of ensuring conformity with accessibility principles, although the main action target tend to be public sector websites.[30] The WAI initiative is a strategy and commitment by the World Wide Web Consortium (W3C) [31] aimed at achieving the Web's full potential, particularly by promoting a high degree of its usability for people with disabilities and limited dexterities. The work undertaken under its auspices spans five major areas: technology, guidelines, tools, education and outreach, and research and development. The intended audience are people who wish to make their sites accessible and organisations seeking a definitive benchmarking for ensuring accessibility, while developers wishing to produce accessible tools and applications will probably use more technical aspects of these guidelines (or will translate them into their equivalents). In terms of this aspect of accessibility, the most relevant issues concern WAI Technical Activity and WAI International Program Office Activity. The latter is focused on enabling co-ordination among the relevant stakeholders in the arena such as industry, organisations representing people with disabilities, governments and research organisations. The former is concerned with the work on technology, guidelines, and tools to increase accessibility of the Web. Here particularly relevant are WAI guidelines for web authors. These can be classified into three groups – guidelines for general page design, for graphical features and for special features (these are outlined in vignette 2.

*Vignette 2. Wai guidelines an putting it in practice - What web authors and, increasingly, IT managers should now*

*WAI guidelines are aimed at all relevant aspects of website design, namely web page design, graphical features, and special features. In relation to the general page design, recommendations are summarised:*

- *Maintain a simple and consistent layout and keep background simple*
- *Use standard HTML*
- *Design large buttons*
- *Caption video and transcribe audio resources / features*
- *Make all links fully descriptive*
- *Include a note regarding accessibility and invite feedback*

*For graphical features, the recommendations can be summarised as follows:*

Each guideline includes a checkpoint, which in turn includes a priority assessment that indicates its importance for users with disabilities. These priorities are:

> *"Priority 1 (P1)*
> *This checkpoint must be satisfied by user agents, otherwise one or more groups of users with disabilities will find it impossible to access the Web. Satisfying this checkpoint is a basic requirement for enabling some peoples to access the Web.*
>
> *Priority 2 (P2)*
> *This checkpoint should be satisfied by user agents, otherwise one or more groups of users with disabilities will find it difficult to access the Web. Satisfying this checkpoint will remove significant barriers to Web access for some people.*
>
> *Priority 3 (P3)*
> *This checkpoint may be satisfied by user agents to make it easier for one or more groups of users with disabilities to access information. Satisfying this checkpoint will improve access to the Web for some people. "* [32]

Another associated and indeed often coupled way to achieve full accessibility is by adhering to the "Design for all" principle, which is particularly relevant for future ICT developments. The "Design for all" is wider in its scope [than WAI] and is also referred to as "Universal design". It is a principle that seeks to take account of the needs of the maximum number of potential users of a product or service at the design stage. The aim is to achieve highest possible direct subsequent usage of and access to the ICTs for people with extremely varied abilities and circumstances. This approach, firstly, aims to ensure mainstream ICT services and equipment are accessible. Secondly, it aims to ensure that they are capable of being adapted - adaptability principle). Thirdly, it seeks to minimise the need for assistive devices and procedures, but is still assuring that the design is at the same time compatible with assistive technologies. It has been recognised that products and services designed according to this principle are easier to use by everybody and are therefore inherently more inclusive.

Design for all concept can be operationalised in many ways, but mainly on case by case basis. An example of this is given in the vignette 3 below.

Vignette 3. Design for all and the Information Society in practice

*The 'Design for All' principle has been used for the design of the new generation public kiosks that provide a "one stop" access to a variety on information sources. Thus the following constructs can be identified[1]:*

- *Locating and accessing a terminal*
- *Card systems in use*
- *External features, labels and instructions*
- *Screens and instructions*
- *Operating instructions*
- *Keypads*
- *Touchscreens*
- *Retrieving money, cards, receipts*
- *Typefaces and eligibility*
- *Training, ( The Include project, The Promise of the Information Society, 1998)*

*each of which can be broken down and operationalised accordingly.*

[32] http;//www.w3.org/WAI.

The 'Design for All' principle is related to WAI principle, which can be seen as its intrinsic part. One of the examples of this approach is the usage of the "Bobby test". Here the designers interacts with users who help them to identify the changes needed to enhance accessibility and user friendliness of the Web, which is especially relevant for users with disabilities. The "Bobby" is a term used for this Web page authors' tool and we can describe briefly how does it "work". For example, a blind user should be aided by adding a sound track to a movie, and a person-user with hearing difficulty should be aided by a written transcript of a sound file on a Web page. "Bobby" will recommend that these features be added if they do not already exist[33].

There is still some disagreement in relation to the specific course of action regarding the best way to achieve web-based accessibility. Thus some advise adopting a pragmatic approach, based on prioritisation (according to the aforementioned priority groups three levels) since trying to ensure it instantaneously, especially in relation to, say web pages and content designed earlier might not always be feasible.

A consistent theme present throughout the topic of info-inclusion is the concept of relative gap in use of ICTs and differential opportunity to do so (indeed this concept runs through all four sub-topics identified in WP 1) and is particularly relevant for the subtopic of access. Thus digital divide is gauged by looking into differences in proportion / share of different individuals' and groups' Internet access and connectivity rates, trying to detect and quantify the gap between specific groups in a society (e.g. between people at risk from being on the wrong side of the digital divide and the rest of general population).

### *Enhancing the participation in the Information Society*

One of the proclaimed policy aims in relation to the Information Society is to enhance general levels of participation as a way to tackle info-exclusion and promote info-inclusion. At the lower level of abstraction, info-inclusion can be best encouraged, and its sustainability ensured, by providing a useful Internet content to the groups and individuals that are vulnerable to info-exclusion or to those who are yet to fully embrace the Information Society. The rationale for conceptualising the proximity to the Information Society in terms of accessing and using the Internet has been provided elsewhere in this report. A related issue, which is intertwined with a good and useful content, is the perceived benefit of participation (i.e. in this specific case accessing the Internet). Thus if [perceived] benefits of participation in the Information Society in general can be made more tangible, more realistic and easier achievable, the higher participation levels and wider diffusion rates can be expected. This is especially the case if "the Internet drive" is accompanied with appropriate initiatives such as those at the level of community or those featuring an individualised approach (e.g. as featured in the 'Closing The Digital Divide', PAT Report, 2000).

True, the assumed interlinkage between the enhancing the participation [in the Information Society] and actively promoting what can be deemed as a 'socially valuable' content is yet to 'trickle down' and become apparent to all [34].

An important concept above has been identified and it is the *digital content* available on or via the Internet, that is to say its usefulness and appropriateness for the groups that are vulnerable to general exclusion and info-exclusion. Although this concept is in general terms rather broad, the content can be examined in the way to assess its usefulness to low income and *underserved* population. Relevant concepts here are:

- the employment enhancing potential (the Internet as a tool enhancing the labour market matching process, where the jobs at the "lower spectrum" of the labour market are included too),
- the education potential of the Internet content,

[33] The "Bobby Test" is an accessibility test provided on the Web by CAST (Centre for Applied Science and Technology) , a non profit organisation which aims to expand the opportunities for people with disabilities through innovative development and application of technology.

[34] As pointed out by practitioners in the area, ref . AGE.

- the ease with which the information offered in general can be clearly understood and utilised by all users ( e.g. those with relatively lower literacy dexterity, with some restricting conditions, and less technically adept)
- the availability of multi-language content (relevant for immigrant communities and minorities)
- opportunities to create content and interact both in general but also in a way that takes account of some specific aspects of users' circumstances ( e.g. cultural context, proficiency levels, etc.) [35].

Another way to achieve and maintain high participation levels in the Information Society is to constantly seek to remove all types of access barriers, thus ensuring its sustainability. The sustainability of participation can be conceptualised as comprising access issues, design issues and achieving and maintaining the critical mass of users in terms of relative rates of participation. Access issues have already being elaborated upon ( the section on subtopic Access to ICTs– nominal access, accessibility , awareness and affordability) and we shall only briefly mention issues relevant in this context. These are affordability of access, convenience of access points (whether at home, alternative access at work that can satisfy individuals needs, or at PIAP or equivalent access at the community level) and user knowledge and expectations. In this context, it can be argued that ex-post perspective on Internet use - personal gratification and experience of using the Internet is another important aspect of access relevant for the sustainability. In terms of design issues relevant for sustainability, most relevant are user support, inclusion of user needs (particularly the needs of people vulnerable to info-exclusion) in the design phase, promoting interactivity, and ensuring the adequacy of content (its interactivity enhancing part included), and in general highlighting the benefits of participation. It is in this way that the critical mass will be reached and content adequately diffused throughout a wider community.

## *1.3 Information Society and social inclusion – the rationale and the need for innovative indicators*

The potential for digital exclusion is arguably inherent to the deployment of advanced ICTs and related services that create and sustain the information society[36]. It has become evident that the advent of the information society has not reached and been extended to everyone and certainly not to the same degree. Although many of the issues around the inclusiveness or otherwise of the Information Society are still widely and hotly debated, there are some points of general agreement though.

At the outset, it has been recognised that progress towards the Information Society and achievement of its vision (and promise) is highly dependent upon the degree and nature of user engagement with the whole process. The user engagement in broad terms is, in the first instance, dependent upon the level of relevant skills and accessibility of electronic media (by and large web-based, in whichever form).

Another point worth making at this junction relates to the 'supply side' and facilitation of user engagement, which in the past was usually assessed in somewhat technical terms. This point (in Sibis) relates primarily to the assessment of attempts made to reduce the exclusiveness of the Internet / Web and make it more readily accessible to widest possible audience. While laudable, the initiative in this regard that only aims to assess public sector websites and information provided in this way is surely not sufficient if the aim of digital inclusiveness is to be reached. Hence the need for indicators aiming to capture online corporations' strategies in terms of intended width of the audience ( e.g. Sibis DMS indicators on website accessibility / user friendliness).

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[35] Adapted from Online Content for Low income and Underserved Americans, 2000.

[36] Mansell and Steinmueller, 2000.

Another point of common agreement is that participation in the information society, which presupposes adequate access, is an important political issue. This fact has captured the attention of policy makers. Thus participation in the information society has many relevant connotations to the whole concept of modern citizenship.

Universal and relatively evenly distributed participation in the Information Society (or user engagement in broad terms) has a potential to enhance social cohesion. The European Commission's and member states national governments' proclaimed goal to achieve *greater social cohesion* [37] has been incorporated into eEurope action plan. However, it has become rather obvious that on-line services aimed at achieving this aim (for example services relating to finding and facilitating employment) and achieving various social policies are conditional upon the inclusion of the target groups and individuals into the information society. Thus info-inclusion becomes both a matter of a principle towards which policy makers aspire, but at the same time this has inevitably some pragmatic overtones in relation to normal and unhindered functioning of a [information] society.

The vision of inclusive information society centres upon the following main positive principles[38]:

- It needs to be (suit) able and conducive to the meeting of individual and community needs
- It needs to sensitive to the every day life needs of ordinary people (e.g. "bottom up" type and / or community driven to a significant and meaningful degree
- It needs to be barrier free in relation to its content (e.g. accessibility in relation to literacy levels and diverse faculties that users possesses, the ease of use for all groups of society and general user friendliness, be culturally sensitive, and inclusive in terms of availability of training and technical support).
- It also needs to be sustainable which can be ensured, for example by promoting (and enhancing) interactivity, and ensuring the establishment and continuity of usage patterns.

If we accept the above plausible assumptions, coupled with the already acknowledged desirability of benevolent policy influence on each one of these points, then the need for timely, and adequate indicators that should capture as much as possible of both proclaimed policy aims as well as the main principles of the Information Society becomes obvious. While a considerable progress has been made towards equipping policy makers with relevant indicators, those relating to the *user engagement*, in a broad sense, *with the Information Society*, are still rather scarce, especially at the EU level.

[37] EC Benchmarking Report following-up the "Strategies for jobs in the Information Society, :2.

[38] Online Content for Low-Income and Undeserved Americans, 2000

# 2 [Sibis] Indicators on social inclusion and the Information Society

Listing of existing indicators will follow the structure reflecting the sub-topics described in section 1 , subsection 1.2.3 of this report , with a due regard to the (first) perspective on the information society and social inclusion – continuity and / or change. It is useful at this point to draw attention to the distinction that can be made between traditional indicators and the innovative ones, since this point is particularly relevant for this sub-topic. By and large, the indicators currently referred to as "traditional" in relation to info-inclusion can generally be arrived at by combining the ['demographic', socio-economic] indicators used to identify the individuals and groups that were traditionally at risk from social exclusion with the indicators designed to measure the ICT usage of these groups (or lack of thereof). However, there are exceptions to this since some indicators relating to the usage of ICTs by people with disabilities are also innovative, not least due to the dearth of representative survey data in this field. On the other hand, many of what can be considered as innovative indicators largely deal with access conceptualised to comprise some 'qualitative' issues of access (defined in broader terms), that is to say these indicators are designed to assess the use to which the access to ICTs can be put and potential for benefiting from having an unhindered access. Two sets of indicators are particularly relevant here - those focusing on the web / Internet accessibility and those focusing on the Internet content analysis.

A question might have been put forward in relation to the choice of the Internet as the main measure of ICT usage. It was decided to focus upon the Internet being the most prominent and ubiquitous ICT at this junction, and its likelihood to remain so for some considerable time. This choice is further reinforced by the eEurope action line priorities in this regard. Therefore, assessing it in terms of accessibility and its usefulness for the users that are at risk from info-exclusion is justified. It also represents a [welcome] departure from examining the digital divide in somewhat restricted quantitative way, relying only upon the indicators designed to capture mainly nominal access (defined in narrow terms).

The main purpose of the above mentioned innovative content-related indicators is to assess the usefulness of the Internet to the groups and individuals that are relatively less likely to avail of information or services provided / available via this medium. For example, the employment and education potential of the Internet content are relevant indicators, as well as the ease with which the information offered can be clearly understood by users with a limited literacy. Another indicator gaining relevance is the availability of a multi-lingual content. Furthermore, the opportunities to create content and interact in a way that takes account of cultural context of the users are also relevant issues, although specific indicators (i.e. suitable for a survey research) are proving hard to develop.

The second batch of indicators that can be considered as innovative refer to the issue of the Internet / web accessibility - namely we are concerned with innovative ways of assessing it, using mainly technical dimensions and parameters (e.g. the Bobby test, tripartite accessibility levels / priorities) and seeking to translate these technical ways into their less technical equivalents. Of course, examining the Internet and web pages in terms of general user friendliness is more readily associated with qualitative assessments ( e.g. various "experts' assessments" and related indicators). However, given the limited scope and reach of such studies, the need for equivalent quantitative indicators is growing.

The indicator typology and associated sub-topics structure is illustrated is in *Figure 2-1. Approach to the topic- an overview of indicator typology and a path for indicator generation* , while each of the identified sub-topics is also illustrated in more detail subsequently, in *Figure 2-2. Depicting indicator typologies and path for indicator generation for the topic of social inclusion and the Information Society*.

**Figure 2-1. Approach to the topic- an overview of indicator typology and a path for indicator generation**

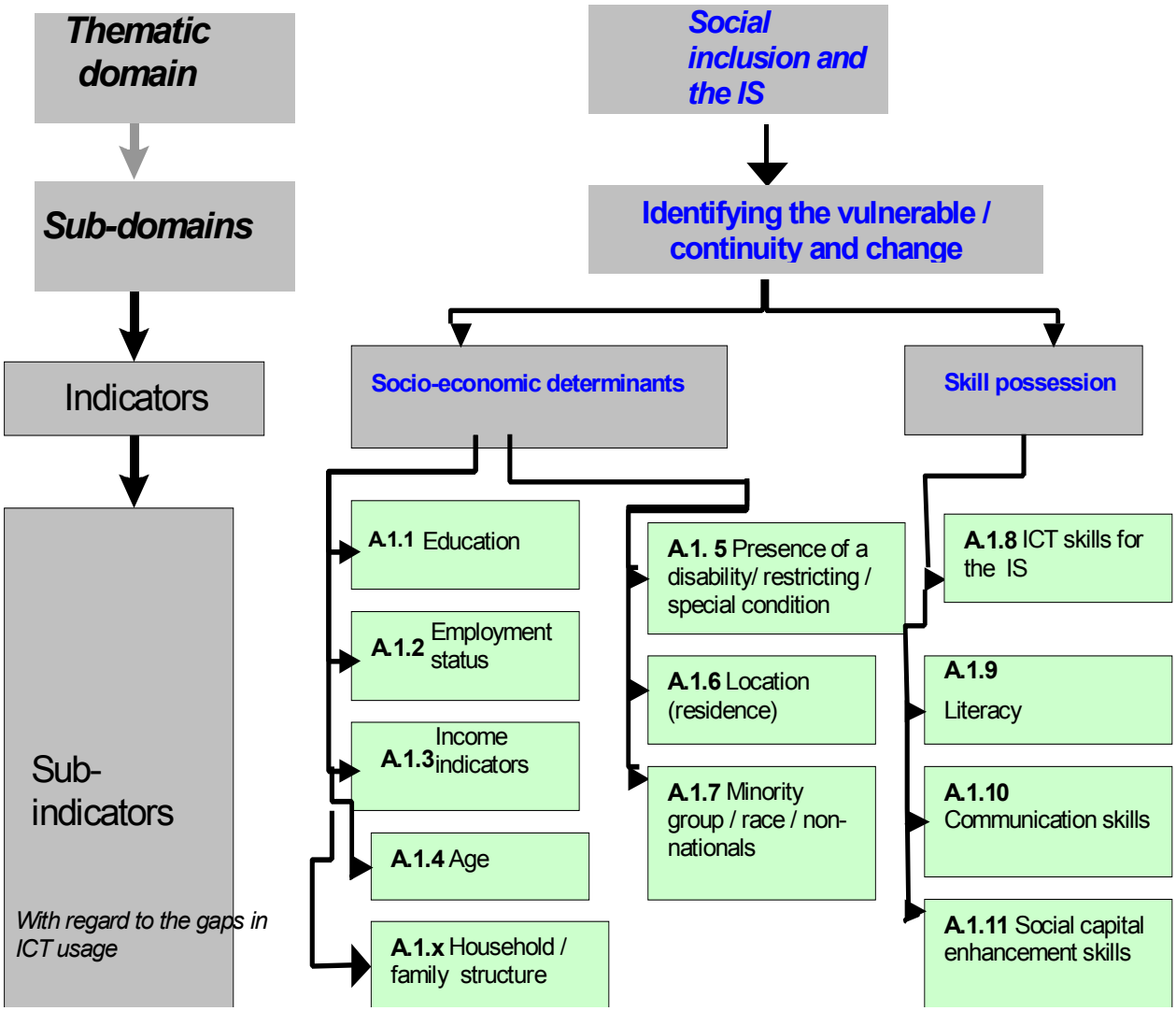
<table>
<tr><td colspan="4">Thematic area</td></tr>
<tr><td colspan="3">Social inclusion and the Information Society</td><td></td></tr>
<tr><td colspan="3">Suggested subtopics</td><td>Suggested sub-domains / perspectives</td><td>Common theme throughout</td></tr>
<tr><td rowspan="4">Identifying vulnerable / at risk groups and individuals</td><td rowspan="4">Access & affordability, access skills & awareness and accessibility</td><td rowspan="4">Rationale for participation in, and sustainability of the Information Society</td><td>Continuity and change regarding the Info-inclusion and social inclusion</td><td rowspan="4">Overarching theme: Identifying gaps in proximity to / participation in the Information Society [39]</td></tr>
<tr><td>Social inclusion and ICTs as enabling tools / policy accompanying device?</td></tr>
<tr><td>Opportunities and threats / barriers to inclusion</td></tr>
<tr><td>Social inclusion through interactions</td></tr>
</table>

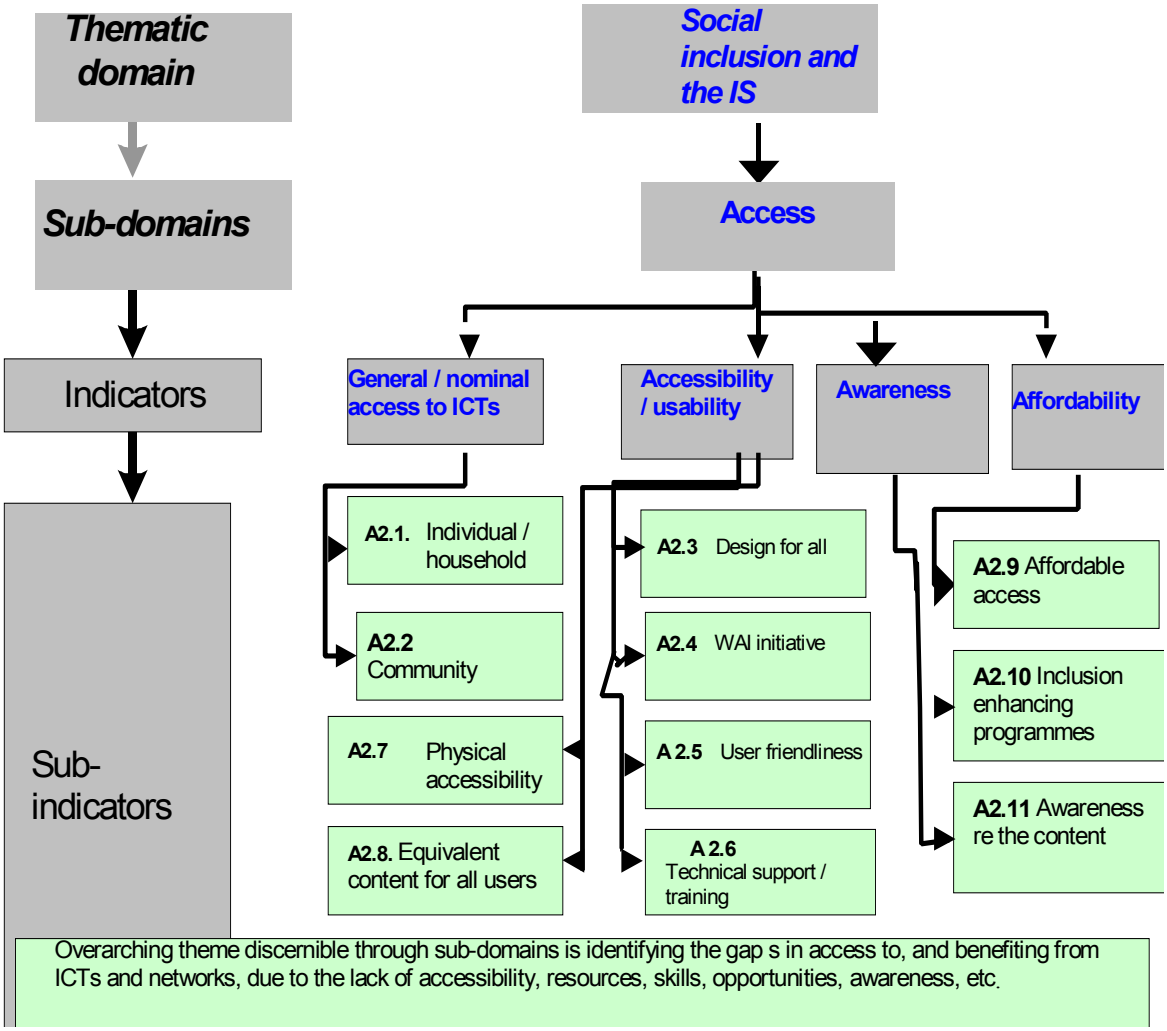
Subtopic breakdown and corresponding concepts are depicted overleaf. It was sought to depict both current indicator typologies as well as to provide the way forward for the subsequent work to be undertaken.

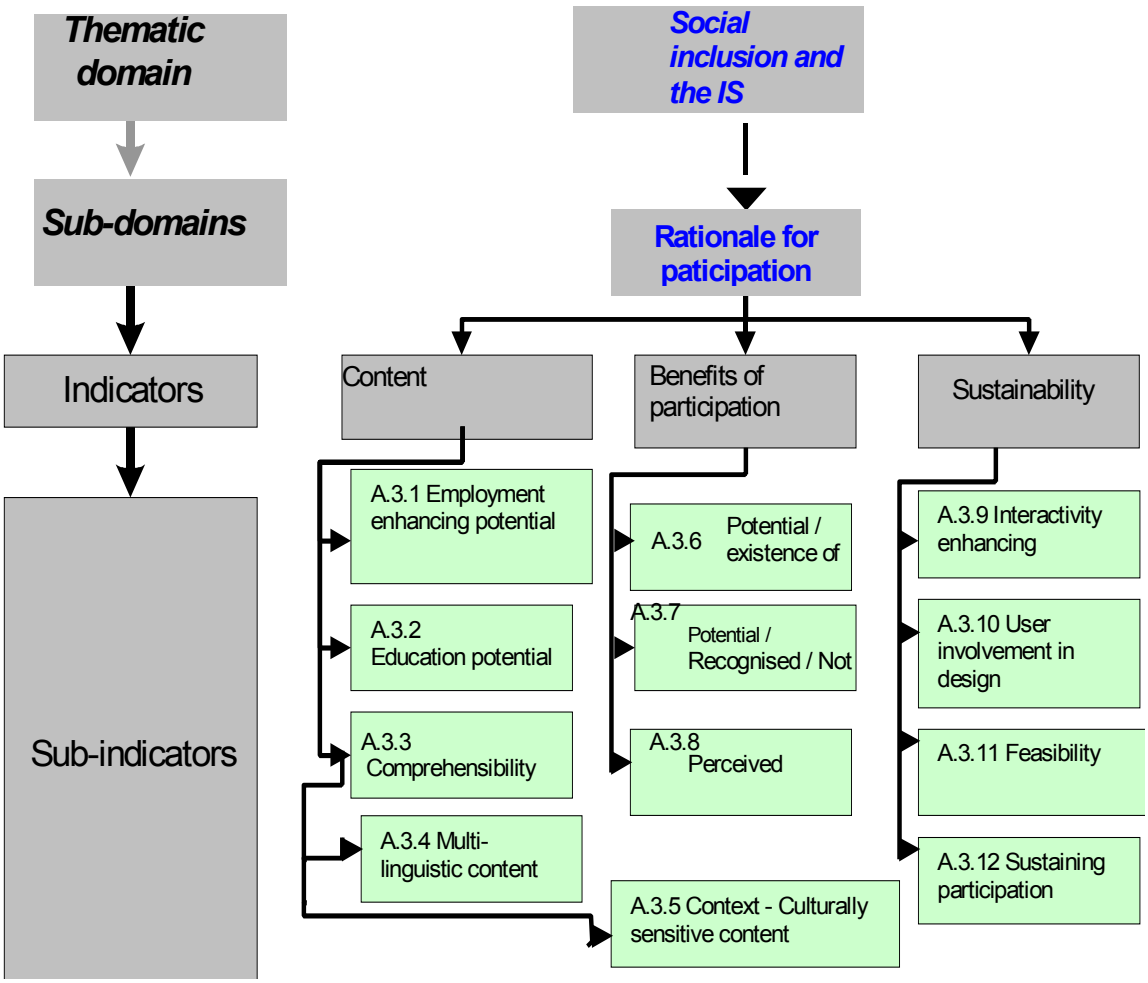
Next, the subtopics and comprising structures are presented that are useful for indicator typology and subsequent indicator generation (on the three pages overleaf).

[39] "Proximity" here encompasses access in its broadest term, including qualitative access issues such as benefiting from the access to and usage of ICTs and information society developments.

**Figure 2-2. Depicting indicator typologies and path for indicator generation for the topic of social inclusion and the Information Society**




Thematic domain
Sub-domains
Indicators
Sub-indicators
Social inclusion and the IS
Access
General / nominal access to ICTs
Accessibility / usability
Awareness
Affordability
A2.1. Individual / household
A2.2 Community
A2.7 Physical accessibility
A2.8. Equivalent content for all users
A2.3 Design for all
A2.4 WAI initiative
A 2.5 User friendliness
A 2.6 Technical support / training
A2.9 Affordable access
A2.10 Inclusion enhancing programmes
A2.11 Awareness re the content
Overarching theme discernible through sub-domains is identifying the gap s in access to, and benefiting from ICTs and networks, due to the lack of accessibility, resources, skills, opportunities, awareness, etc.


Thematic domain
Sub-domains
Indicators
Sub-indicators
Social inclusion and the IS
Rationale for paticipation
Content
Benefits of participation
Sustainability
A.3.1 Employment enhancing potential
A.3.2 Education potential
A.3.3 Comprehensibility
A.3.4 Multi-linguistic content
A.3.5 Context - Culturally sensitive content
A.3.6 Potential / existence of
A.3.7 Potential / Recognised / Not
A.3.8 Perceived
A.3.9 Interactivity enhancing
A.3.10 User involvement in design
A.3.11 Feasibility
A.3.12 Sustaining participation

It is also useful at this point to provide a reference table for linking indicators with eEurope actions. Below are actions that are relevant for the topic of social inclusion and the information society. It also includes one action line from topic 5 aimed at promoting lateral diffusion of access (action 5.6). Rationale for including this action is best justified in the Irish context, where PIAPs are provided in public libraries, with the aim of increasing community access to the iCTs. Furthermore, the ESDIS also prioritised this indicator for the topic of "participation for all in the knowledge-based economy", therefore justifying the inclusion of this action in the reference table below.

**Table 2-1. eEurope actions reference table**

| ***6 - Participation for all in the knowledge-based economy*** | | | |
|---|---|---|---|
| **eEurope code** | **Sibis Wp2 code** | **Action** | |
| **6** | **2.b.6** | | |
| **6.1** | **2b-6.1** | Policies to avoid info-exclusion will be more effectively co-ordinated at European level through benchmarking of performance and exchange of best practice between Member States. | **X** |
| **6.2** | **2b-6.2** | Publication of "Design for all" standards for accessibility of information technology products, in particular to improve the employability and social inclusion of people with special needs. | |
| **6.3** | **2b-6.3** | Review relevant legislation and standards to ensure conformity with accessibility principles. | |
| **6.4** | **2b-6.4** | Adoption of the Web Accessibility Initiative (WAI) guidelines for public websites. | **X** |
| **6.5** | **2b-6.5** | Ensure the establishment and networking of national centres of excellence in design-for-all and create recommendations for a European curriculum for designers and engineers. | |
| **5** | | ***5- Working in the knowledge-based economy*** | |
| **5.6** | **2b-5.6** | Set up public Internet access points in public spaces and establish multimedia tele-centres in all communities providing access to training and e-work facilities, where appropriate using the Structural Funds[40]. | **X** |

[40] Inclusion of PIAPs initiative here is justified since it is the main eEurope benchmarking indicator for participation for all in the IS (List of eEurope benchmarking indicators, 2001)

### 2.1.1 Suggestions for sibis indicators in the area of e-inclusion

This section presents an initial selection of indicators relevant for the topic of social inclusion and the Information Society, with the aim to include them in appropriate modules, comprising a part of the survey (s) instruments to be conducted by the SIBIS project. With this in mind, the main emphasis has been put on indicators that can be gathered via 'omnibus' type survey, being the main research instrument for the project. Furthermore, and following further the project's methodological approach, a distinction is made regarding the indicators (operationalised as variables and / or survey questions) that will relate to a general population survey (GPS) and those to be piloted in a survey targeted at the decision makers in companies/establishments (DMS). Infering from the above, there will be two separate units of analysis – individuals (and to a certain extent, households) and private and public companies / workplaces. The final decision about including the variables elaborated upon below had to pay heed to the following factors:

- *Policy and topic relevance*: whether variables are set to yield indicators that are / will be relevant for current EC policy making, in particular for eEurope action lines, and for a better understanding of the Topic and pertinent issues in general
- *Efficiency and feasibility*: apart from the cost- benefit assessment (i.e. benefits of including variables and usefulness of indicators that are generated from them) another issue need to be considered - not all indicators and not all topics lend themselves to survey research. This fact had also influenced the choice of the variables.

The process of finalising which variables were to be included in the Sibis surveys and which were to be suggested to other parties and / or included in different research techniques has been an iterative one, and it was envisaged that it would benefit form the input of the external methodological experts.

After briefly outlining gaps in the contemporary coverage of the topic, each subtopic that can be used as a base for indicator generation will be outlined , together with initial Sibis indicators to be piloted / data gathered for.

#### *Gaps in the statistical coverage of the topic*

An integral part of this task has been identification of the gaps in [quantitative] coverage of the area of Social inclusion and the Information Society.

At a general level, it is possible to identify three areas where the gaps in current statistical indicators [currently] available to policy makers are discernible. These areas are:

- The Information Society / Internet – suitability and user friendliness and usage rates of disadvantaged groups, especially of people with disabilities ( relevant for both DMS and GPS).
- Information Society / Internet and an individual and (local) community, with the emphasis on its usefulness and the interaction perspective, which are both conducive for sustainability of engagement with the Information Society.
- The suitability of the Internet content for a general user, accompanied with a perceived / inferred suitability of this new electronic medium to become a universal information source bringing together content that was previously available mainly through other channels / on other mediums.
- Digital divide indices in use – In general. these indices either tended to focus on a global picture and were designed with a global level in mind, primarily for measuring the (Information Society) situation in the countries on very different levels of ICT development (The IDC/World Times Information Society Index) , or their focus was on measuring 'Access' ( e.g. to the Internet) in rather narrow terms, which would largely correspond to a definition of access as mainly encapsulating a nominal access, without enough attention

to the individuals' circumstances ( e.g. skills, dexterity, know-how & experience, resources, etc).

It was intended to address the above identified gaps with due regard to eEurope action lines and the result is the suggestion for new indicators to be operationalised via SIBIS (DMS and GPS) surveys. The new indicator generation process has followed the logical three path for each subtopic already identified in this report. At the same time, due regard had to be given to some practical operational issues, primarily aligned with the research technique used – CATI (Computer Assisted Telephone Interviewing). Consistent with the latter, the indicator development had to conform to a modular approach that is consistent with a telephone survey questionnaire design (GPS and DMS modules were designed on these basis).

### 2.1.2 GPS related indicators

*Module relevant demographic variables*

General demographic indicators relevant for the topic: Identifying those vulnerable to info-exclusion – testing a continuity and change perspective in relation to traditional social inclusion

It needs to be pointed out that research, particularly that of quantitative nature and at cross national level, into info-inclusion is still rather limited, particularly in Europe. However, the available body of research on the topic does indicate that the groups and individuals that were relatively more at risk from being excluded from participating in society in general are also more likely to be on the wrong side of the so-called digital divide. Therefore, it is proposed here to incorporate a wide range of demographic variables (the presence of a disability and its adverse effects is also discussed in more detail in the next subsection) into the GPS SIBIS survey. The starting point would be a labour market situation, followed by education level, area of residence, age, gender and two particularly sensitive indicators – income levels and belonging to a minority group (ethnic / race). While these 'secondary indicators' are not necessarily novel from a strictly statistical point of view, there is nevertheless a compelling rational for their inclusion in the surveys. The aim is to be able to assess the various groups in relation to their participation and proximity to the Information Society (e.g. the unemployed[41], the elderly, individuals / groups / households on relatively low incomes, people belonging to ethnic / racial minorities, etc). It is envisaged that this module will be equally useful for gaining a better understanding of other topics, as well as for enhancing explanation potential of the whole study.

**Indicators for which data can be used**

- Identifying and comparing the groups and individuals vulnerable to info-exclusion and experiencing relatively lower participation rates and different participation patterns in the knowledge society / information society
- Comparisons of the adverse effects of particular sources of disadvantage and evaluation of cumulative and compounded disadvantage in relation to the proximity to the information Society
- Association of individuals' socio-economic factors / determinants and their position in relation to the Information Society

[41] In relation to this category, delineation would be desirable and strongly advised between long term and short term unemployment, and if previously employed, in what sector. This distinction has always been relevant in researching labour market but has become increasingly relevant for another reason – many recent job losses in Ireland (and in the USA) have occurred in the high technology sector. However unlikely given the sample size, it is still possible for some distortion to occur since we might interview a person (s) with a great knowledge / past use of ICT temporarily out of work.

**Independent variables needed**

- These variables are generally considered 'independent'.

At the same time this is the area where a significant potential exists for utilisation of the indicators from topics 4 (Education related), and 5 (Work, Employment & training and Skill related). The above indicators can be combined into simple but meaningful indicators and indices (e.g. usage of the Internet by people on relatively low income, access to the Internet by disadvantaged groups in a society, lapsed Internet users by income levels, etc). Additional (derived from traditional) indicators will be required to detect income disadvantage and the presence of limiting conditions / disabilities / special needs & requirements.

Income indicator needs to be further discussed and adjusted, given its sensitive nature and a high potential for 'refusal' by potential respondents. Therefore, an income scale (a broad one, to pre-empt refusals is preferred rather than a detailed one, despite its lower 'sophistication' and 'sensitivity') is suggested, as presented below, while the relevance of persistence of relatively low income in relation to proximity to the Information Society is also suggested to be tested, (by using the income change variable). In a similar vein, we can use the data measuring labour force situation of respondents, primarily the incidence of long term unemployment and its association with the individual's proximity to the Information Society.

*Indicators under this subheading that will be used in sibis will not be elaborated in detail here since they are only updated version of the existing, 'standard' socio-economic / demographic indicators ( and are available in appendices section 3 , annex 3.2*)

A disability / restricting condition (and participation in the information society)

Participation of people with disabilities in the Information Society has become one of the issues that are ranked quite high in terms of its relevance for policy making at the EU level. It is however difficult to adequately capture this topic with the SIBIS GPS indicators, mainly due to the limited sample size (particularly at the country level) and to the particular research method used (CATI technique). These difficulties notwithstanding, best efforts should be made to include this indicator / associated variables. It however needs to be stated at the outset that despite including this module, the GPS surveys may still fail to provide enough data required for a complete evaluation (or the one carrying a great weight) of the position of people with disabilities in relation to the Information Society. It is therefore intended to suggest some relevant indicators to be included in DMS survey. These indicators would focus on web accessibility which combined with the indicators gauging work organisations' awareness and implementation of the Internet user friendliness measures should provide us with a more complete picture in this regard. The latter set of indicators will be outlined in the DMS subsection.

Regarding this group, it had to be relied upon some (adapted) traditional indicators for detecting the presence of disability in general population. In relation to operational issues it could also be possible, in principle, to gather second hand data in this regard (e.g. from the respondent answering on behalf of a person with a disability who is a household member), although a considerable loss of information would probably be inevitable.

**Indicators for which data can be used**

presence of a disability (self-assessment)

adverse effects of a disability

adverse effects of a disability and participation in the knowledge based economy and society (while in principle data could be collected both by a proxy i.e. using an interviewee other than person with disability from the same household or directly by persons with disabilities, depending on the type of disability, the latter is more likely to be the case

**Independent variables needed**

in paid work (yes/no)

age (cohorts or ratio measure / variable)

education level

participation training courses and activities

*Module based on subtopic access comprising of 4As - access nominal, accessibility, awareness and affordability*

Nominal access indicators should be available from the topic 1 (Telecommunications & access). Indeed, 'Access' has already been defined as one of the horizontal topics in the project and many aspects will be common with the topic of 'telecommunications and access', with the result that many indicators from this topic can be used for building the indices that are relevant for the info-inclusion topic. It is expected that this module can benefit from this topic and / or indeed be incorporated in it (e.g. questions about high speed residential access, main access devices, etc.). Another SIBIS topic is relevant here and it concerns the relevant skills needed to access and effectively use the Internet, the issue covered in topic Work, Employment and Skills that might yield some direct "ability to use ICTs" Indicators. In this initial phase, we focus on individuals' Internet access points – e.g. household versus elsewhere access with regard to the fact that workplace access can often be more than an adequate substitute for the home one, perceptions of affordability of the Internet access at home, awareness of the public Internet access points (PIAPS) and its adequacy, and use of the information available on the Internet. This module can also incorporates another indicator, which is aimed at measuring the very recent phenomenon concerning leaving the Internet or lapsed home Internet users, which need explaining.

**Indicators for which data can be used**

Internet access rates & main points of access, multiple access points, quality of access points

Access - relevant skills required

Lapsed home users and reasons – access and affordability related reasons primarily while the content adequacy can also be a relevant reason

Awareness of PIAPs and use

Affordability of household access

Reasons for not connecting (household non users)

**Independent variables needed**

Labour market situation

gender

age

presence of a disability

type of household (number , number of earners, and age of children)

income levels

educational attainment

| **Name of indicator** | **A. 2. 12 Perceptions of affordability of access for participating in the information society (the Internet and PCs access) -** |
|---|---|
| Definition | Defined as the costs of Internet access / usage as perceived by the respondents |
| Notes: | Target groups : GPS indicator<br>Can be used as a part of composite indicator. Weighting will assigned taking into consideration the cost of hardware equipment and cost of maintaining access via telephone line[42]. The rise of alternative access points from home / mobile will have an impact too. However, the indicator is expected to be most relevant and is primarily to be targeted at non-users / lapsed users. |
| • | Survey Q1: The price of acquiring computer equipment / equipment for accessing the Internet is too high?<br>Agree completely / agree somewhat/ disagree |
| Sources | Adapted from DANIEE study, where a similar indicator was used |
| EEurope relevance | • *2b-6* general indicator for "participation for all in the knowledge-based economy [and society] |

| **Title** | **A 2. 13 Reasons for not accessing the Internet – lack of access opportunities / facilities / resources, awareness and perceptions of the (social desirability ) of the access to the Internet** |
|---|---|
| **Definition** | Defined as the individual's perceptions of the (use) of the Internet based on the actual experience (lapsed users) and on general conceptions held that are formed without the actual experience of using the Internet |
| **Notes** | It is possible to envisage that some of the indicators below could be used for index building. However, it would be necessary to separate 'lapsed' users from 'never online users' and tentative index suggestions are presented below |
| **Sources** | Comparable sources of data :Eurostat |
| **SIBIS survey: Q and group to be asked** | Target group: GPS (General Population Survey) lapsed users and non users (those who have not used the internet in the reference period and /or never)<br>• The Internet requires advanced computer skills<br>• It is not easy enough to get access to the Internet<br>• The Internet is too time consuming<br>• The Internet is ( was) too expensive<br>• The internet lacks useful or interesting information<br>• I have no interest in the Internet / is not something for me |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

[42] Although the approach could be disputed, the price of average PC and approximate expense on the Internet related telephone rates on annual basis were considered , adjusted for probability of taking additional telephone line ( low). The approach to the weighting would need to be cross checked for all countries surveyed ( the prices could vary more)

| **Title** | **A 2. 14 . Internet access – Connection type** |
|---|---|
| **Definition** | Defined as the individual's access connection type in terms of speed |
| **Notes** | It is possible to envisage that the indicator could be used for index building / and in conjunction with other variables |
| **Sources** | Comparable sources - |
| **SIBIS survey: Q and group to be asked** | Connection type at home – followed up by the relative speed / type of access being used now / before i.e. progression to high speed access |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

| **Title** | **A 2.15 ICT skills possession** |
|---|---|
| **Definition** | Defined as the individual's [self-appraised] abilities to undertake various Internet related tasks , operationalised to how confident a respondent felt in performing various operations that can be performed on the internet . The focus was on interactivity aspect here with the reversal of information flow ( from the individual to others) |
| **Notes** | It is possible to envisage that the indicators could be used for index building / and in conjunction with other variables. Internet use can be supplanted with personal computer use, mobile telephone use, etc |
| **Sources** | Comparable sources - |
| **SIBIS survey: Q and group to be asked** | Being confident ( very; fairly; not confident) in doing the following:<br>• using the Internet to expand communication possibilities ( e.g. phone calls, etc.)<br>• Creating a personal web / Internet page<br><br>Q to be directed to all internet users regardless of the length of experience |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

Composite indicators under this sub heading could include

| *Index title:* | The Internet – usefulness for an individual – perception | |
|---|---|---|
| Indicator / Item 1 | The internet lacks useful and / interesting information | Weight 0.50 (1/2) |
| Indicator / Item 2 | I have no interest in the Internet / Is not something for me | Weight 0.50 (1/2) |

| *Index title:* | The Internet – perceptions of lack of access | |
|---|---|---|
| Indicator / Item 1 | Skill insufficiency – the internet requires advanced computer skills | Tentative weighting 0.25 per item |
| Indicator / Item 2 | Lack of (Internet) Access – it is not easy enough to get access to | |
| Indicator / Item 3 | Too time consuming - | |
| Indicator / Item 4 | Perception of (relative) cost of usage – Too expensive to use | |

*Module content, sustainability and enhancing the Internet use*

One of the issues that is becoming increasingly prominent in relation to the Information Society is its sustainability and relevance for all people / everyone. Indeed this is one of the ways to ensure its sustainability and a wide(er) uptake. Providing adequate and relevant Internet content is a crucial issue here, together with enhancing general user friendliness of it, the issue discussed already under the access subtopic. Another area where Internet content can be made more relevant for ordinary users is provision of information that is useful at the local, community level. While indeed the Internet has been credited with many good characteristics - like providing general information to a universal user - its mainly global outlook has been seen to be in opposition to its relevance at the local level. However providing locally relevant information and enhancing its uptake at the local level has become to be seen as particularly important for making the Internet more inclusive a tool, which can positively impact upon social inclusion.

These are the issues where SIBIS surveys will seek to provide original data with a clear value added for policy makers at the EU and national government level.

| **Indicators for which data can be used** |
|---|
| Experience of using the Internet (time) i.e. how experienced a user |
| Experience of the Internet (content evaluation) |
| Relevance of the Internet for everyday life at the local level |
| Sustainability of future use |
| Improvements (at general and local level) suggested by users |

| **Independent variables needed** |
|---|
| Labour market situation |
| Age |
| Presence of a disability |
| Income levels |
| Education levels |
| Belonging to [ethnic] minority grouping |

| **Title** | **A 3. 13. Length of experience of using the Internet** |
|---|---|
| **Definition** | Defined as the individual's access in retrospective (less than six months – novice user, 6-12 relatively new user, 1-2 years intermediate user, 2 years and more – experienced / 'seasoned' user |
| **Notes** | It is possible to envisage that the indicator could be used for index building. This indicator needs to be used in conjunction with indicator measuring time spent on the Internet [ in the reference period] |
| **Sources** | Comparable sources - an academic study from the US |
| **SIBIS survey: Q and group to be asked** | • When did you use the internet for the first time?<br>• < 6 months ago<br>• 6-12 months ago<br>• 1 year – 2 years ago<br>• 2 years + ago |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the |

| | |
|---|---|
| | knowledge based economy [ and society]' |

| | |
|---|---|
| **Title** | **A3. 14 . e-connections for social purposes** |
| **Definition** | Defined as the individual's electronic communications with friends relatives and for various aspects of civic involvement |
| **Notes** | It is possible to envisage that the indicator could be used for index building / and in conjunction with other variables |
| **Sources** | Comparable sources - |
| **SIBIS survey: Q and group to be asked** | 1) How many of your friends and relatives have their own e-mail address? (all or almost all; about ½; about ¼; only few or no-one; )<br>2) With how many of your friends and relatives do your communicate regularly via e-mail (all or almost all; about ½; about ¼; only few or no-one;)<br>3) Hypothetical non-availability of the Internet – potential outcome: less contact with friends / relatives<br>4) Hypothetical non-availability of the Internet – potential outcome: perception of being socially excluded |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

| | |
|---|---|
| **Title** | **A.3 15 ICT skills possession ( relevant for subtopic 1 and here regarding sustainability)** |
| **Definition** | Defined as the individual's abilities to undertake various Internet related tasks , operationalised to how confident a respondent felt in performing various operations that can be performed on the internet |
| **Notes** | It is possible to envisage that the indicators could be used for index building / and in conjunction with other variables |
| **Sources** | Comparable sources - |
| **SIBIS survey: Q and group to be asked** | Being confident ( very; fairly; not confident) in doing the following:<br>1) Identifying the source of information on the Internet<br>2) Performing information search using the tools available on the Internet<br>3) Using the internet based / associated communication applications:<br>• E-mail<br>• Chat room<br>• Telephone calls |
| **eEurope relevance** | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

| **Name of indicator** | **A.3. 16 Perceptions regarding the Internet content – general level** |
|---|---|
| Definition | Perceptions of online information / information sources on the Internet that encompasses the following categories:<br>▪ The existence of the information that is suitable / can be |

| | |
|---|---|
| | customised for the user<br>▪ Multi-source nature of information, that is to say flowing from a variety of sources rather than being limited to uni-centred diffusion<br>▪ Information flows allowing interaction among users<br>▪ Information flows that enables users to become producers of information (e.g. own web page, local community web page, etc) |
| Notes | This is an innovative (composite) indicator – it uses the same base (Internet content evaluation) as the indicator used once in the US via assessment of web sites / portals. It can be qualitative and quantitative indicator – here adapted for use in survey. Envisaged here as a GPS index / indicators. If used as a composite measure it is envisaged to be used as an index, with equal weighting for each item deemed appropriate ( elaborated bellow). Due to various constraints, it will be necessary to use proxy indicators. |
| Sources | Original source for the content evaluation ( see above definition) – Online Content for Low-Income and Underserved Americans |
| Countries covered | USA |
| Survey Qs Please indicate your agreement with the following statements | Q1: Internet allows / offers a better access to various materials and information (agree, disagree) – ( in relation to other 'traditional' sources of information)<br>Q2: Internet allows me to obtain information from a variety of sources ( can be combined with a skill question regarding the ability / confidence to cross check information found on the Internet) - (agree, disagree)<br>Q3: I generally / regularly can obtain information that is suitable for my needs (agree, disagree)<br>Q4: Internet allows me to establish / maintain contacts that would not be possible without it (agree, disagree)<br>Q5: .Internet allows me to provide information about myself / my local community to other users ( e.g. via creating a personal web page) |

It is envisaged that the above composite measure can be structured into two indices. The first one would measure the adequacy of the Internet content (at general level) combining the items / indicators measuring the perception of the Internet as:

1) a new medium providing the equivalent or better digital content (information generally available on other mediums / from other sources),
2) a medium providing the information from a variety of sources simultaneously
3) a medium providing a suitable information to an average individual / allowing a suitable information to be found by an average individual

These items can be combined into an index as suggested below

| | |
|---|---|
| *Index title:* | Internet content at a general level |

| | | |
|---|---|---|
| Indicator / Item 1<br>Might be obtained via using proxy indicators | Q1: Internet allows / offers a better access to various materials and information (agree, disagree) – ( in relation to other 'traditional' sources of information) | Weight 0.33 (1/3) |
| Indicator / Item 2 | Q2: Internet allows me to obtain information from a variety of sources ( can be combined with a skill question regarding the ability / confidence to cross check information found on the Internet) - (agree, disagree) | Weight 0.33 (1/3) |
| Indicator / Item 3 | Q3: I generally / regularly can obtain information that is suitable for my needs (agree, disagree) | Weight 0.33 (1/3) |

Furthermore, it is also possible to combine the other two items into the Internet content interactivity index (this index can be potentially enhanced by the items measuring interactivity at the local level) as outlined below

| *Index title:* | Internet content interactivity at general level | |
|---|---|---|
| Indicator / Item 1 | Q1: Internet allows me to establish / maintain contacts that would not be possible without it (agree, disagree) | Weight 0.5 |
| Indicator / Item 2 | Q2: .Internet allows me to provide information about myself / my local community to other users ( e.g. via creating a personal web page) | Weight 0.5 |

| *Index title:* | Internet content at local level | |
|---|---|---|
| Indicator / Item 1 | Q1: I can get information about employment opportunities at local level (can also be obtained via proxy – from online job search indicator from another module) | Weight 0.25 |
| Indicator / Item 2<br>Note that this item might be available from other sources | Q2: Internet allows me to obtain information about my local community / neighbourhood area / services available at the local level | Weight 0.25 |
| Indicator / Item 3<br>Note that this item might be available from other sources | Q3: I can participate more in my local community initiatives thanks to the Internet ( *e-mailing list , discussion forum or equivalent Internet based communication mode*) | Weight 0.25 |
| Indicator / Item 4<br><br>Note that this item might be available from other sources | Q4: I am in a position to receive information about / from my local political representative via the internet ( e.g. e-mailing list) (allows me to establish / maintain contacts that would not be possible without it (agree, disagree) | Weight 0.25 |
| Indicator / Item 5<br>Note that this item might be available from other sources | Internet allows our local community to provide information about itself / local community to other users ( e.g. via creating a local community web page, being listed in county / regional websites) | Weight 0.25 |

| Title | A 3.17 Internet 'drop-out' rate |
|---|---|
| Definition | Defined as the individual's continued engagement with the Internet ( also relevant for the access subtopic) |
| Notes | It is possible to envisage that the indicators could be used for index building / and in conjunction with other variables |
| Sources | Comparable sources - |
| SIBIS survey: Q and group to be asked | • Currently connected to the internet? ( Yes / No) . If not, 'have you ever had access to the Internet / home internet connection?'<br>Target group :'past' Internet users, non user at the reference period |
| eEurope relevance | • 2b 6– general indicator for topic 'participation for all in the knowledge based economy [ and society]' |

### 2.1.3 DMS related indicators

One aspect of the methodological approach adopted by the Sibis consortium focused upon the feasibility of conducting DMS surveys incorporating the omnibus type of a survey instrument featuring all topics. It has been decided that survey approach should focus on some particular topics that lend themselves well to this specific research technique (e.g. topic work, employment and skills), which is not necessarily the case in relation to the topic of social inclusion and information society. However the sub-area that could be considered for inclusion into a wide in focus DMS survey instrument concerns the website accessibility and user friendliness.

*Corporate / establishment website accessibility and user friendliness*

The rationale for including this module on a general level is to assess the 'supply side' of the Information Society (conceptualised as the Information Society services and access to available via the Internet) provision that would complement rather well the data gathered from a GPS survey. This rationale would be further reinforced if the IT managers are going to be our main target respondents, since it is more likely that they will be familiar with some specific issues relating to the WAI guidelines, accessibility testing and accessibility priority levels. At the same time more and more HR managers (other potential target respondent groups for DMS survey) are increasingly becoming aware of general ICT issues and it is quite possible that the majority of them are familiar enough with the concept of universal design and design for all, not least given the recent policy drives towards improving the recruiting policies aimed at eliminating all facets of discrimination of people with disabilities in companies' recruiting and selection procedures.

**Indicators for which data can be collected and used**

Share of companies (with the internet presence) that are aware of the Design for all principles and usage of it / putting it into practice / planning to

Share of companies with the internet presence that are aware of WAI principles / guidelines

Share of the establishments / companies with the internet presence making any special provisions for people with disabilities (and other groups with special needs) so that they can access / use their websites (if not why - lack of financial resources, know-how or awareness)

Share of the establishments / companies with the internet presence that have evaluated their websites from the point of view of web accessibility

Future plans regarding the above issues (next one to two years)?

**Independent variables needed / useful**

Internet (online) presence / having a website

Economic sector

Corporate ownership structure e.g. private (both listed on stock exchange or not) versus public / state

Company size

Company structure (MNC, multi-establishment, single site,)

| **Name of indicator (s)** | **A [b] 2.15 User friendliness and accessibility of organisation's website , especially for people with disabilities and limited literacy** |
|---|---|
| Definition | Assessing the organisations' websites user friendliness via WAI – related guidelines |
| Notes | Can be used as an index (equal weighting envisaged for Q1-5, but weighting for Q1a and Q2a will need to be worked out) |
| Sources | |
| Survey Qs ( we expect that this filter question will be a part of e-commerce topic) | Filter question: 'Does your organisation / establishment have a website / online presence? ( YES / NO)'<br>*If yes, then*<br>'We would like to ask you few questions in relation to some features of your website:<br>• Q1: Does you website feature FAQ (or equivalent) facility ( Yes / No)<br>• Q2a: What priority has making your website user friendly for people with visual disabilities or sight difficulties? (High / medium / low priority)<br>• Q2b: What priority has making your website user friendly for people with reduced or limited dexterities? ( High / medium / low priority)<br>• Q2c: What priority has making your website user friendly for …people with limited literacy? ( High / medium / low priority)<br>…cont.[Bearing these groups in mind] would you say that your website could be adapted<br>rather easily,<br>adaptable with minor difficulties<br>would prove difficult to adapt ,<br>or could not at all be adapted to these peoples' needs? ( digression re rationale - could be adapted rather easily = proxy for using Design or All principle); would prove difficult to adapt and particularly; could not at all be adapted would indicate that the Design for All principle was not used )<br>• Q3: Does your establishment or your organisation have formal Guidelines for making your website accessible to people with such special needs (By guidelines I mean rules which have to be followed by your website developers) Was it designed with regard to Web Accessibility Initiative guidelines? (familiarity with WAI can be tested) ( Yes / No) |

| | |
|---|---|
| | • Q4: Was your website ever evaluated concerning its accessibility for people with such special needs (Yes / No) if Yes, then<br>Q4a:Was this evaluation done internally or using external evaluators? ( Internal evaluation; external evaluation; both) |

Suggestion for composite measures of variables relating to user friendliness:

Two courses of action are envisaged, depending on the number of questions that will be included in the final version of a DMS questionnaire – It can be decided to either build a scale or an index. If a significant number of items are included, and these items are assessed to be of equal intensity, it would be possible to build an index with equal weighting attached to each item as follows

Organization's Web Accessibility Index

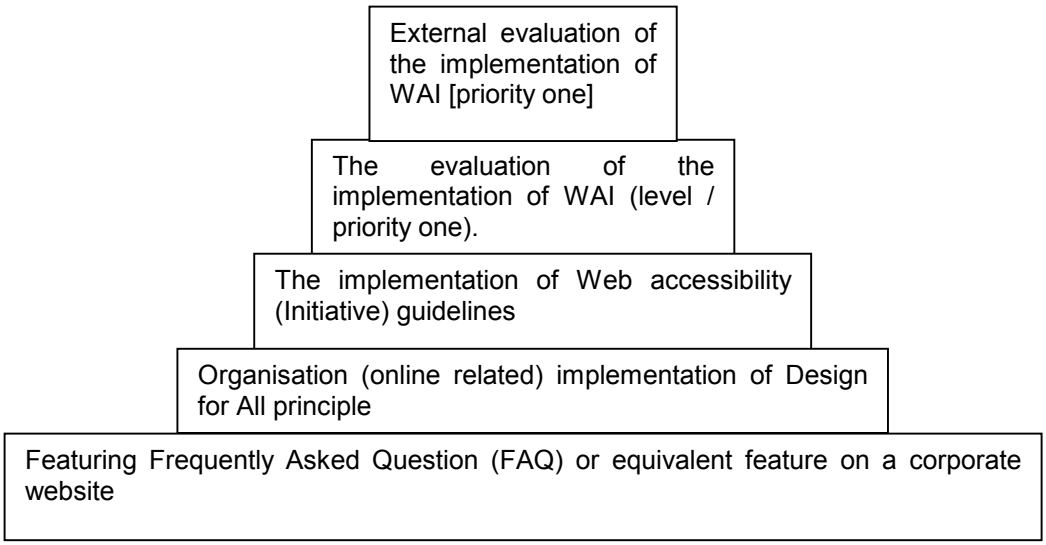
| *Index title:* | Organization's Web Accessibility Index | |
|---|---|---|
| Indicator / Item 1 | Corporate Web being designed with regard to the concept of Design for all | Weight 0.33 (1/3) |
| Indicator / Item 2 | Corporate Web being designed with regard to Web accessibility guidelines | Weight 0.33 (1/3) |
| Indicator / Item 3 | Corporate Website accessibility being tested | Weight 0.33 (1/3) |

It is also possible and probably more appropriate to build a scale gauging the overall user friendliness / accessibility of the website. This scale's construction logic involves assessing different degrees of user friendliness / in this case accessibility, with pattern of corporate actions discernible at various levels that can be captured by this scale. It is envisaged that the scale construction process will have to involve a certain amount of ex-post analysis of the survey data, since the process of constructing scales has proven to be a difficult enough task, especially when studying new areas (such as this one)

In this case the starting would be the lowest 'intensity' item (in terms of this web use friendliness scale) - the item Frequently Asked Question (FAQ). The next item assessed to represent higher degree of (a commitment to) user friendliness and accessibility would be the implementation of Design for All principle, since, the reasoning goes, it involves a higher commitment and investment. At the same time it is reasonable enough to assume that those companies that implemented Design for All principle probably also have a FAQ feature on their site. The third item on this scale would then be the implementation of Web accessibility guidelines, with again a reasonable assumption that this represent if not necessarily higher level of commitment to wider user friendliness then at least a more focused one. This assumption is accompanied by another assumption that those organisations that have implemented web accessibility guidelines have done so following the general principle of Design for All. The final point on this scale would be the demonstrated commitment to user friendliness measured by evaluation of the implementation of WAI (level / priority one), with of course the highest commitment being demonstrated by engaging external evaluators. However, this fifth item might need to be reconsidered since it is not expected that many establishments have gone this far in their pursuit of web accessibility Naturally only the organisations that have implemented WAI guidelines would have done the evaluation, satisfying the scale construction logic requirements. Accordingly, each organisation would then receive a score on this scale from 0 (indicating the lowest or practically no commitment to general user friendliness at present) to 4 [or five] (indicating a high commitment being demonstrated). Instead of tabular presentation used for indices, this scale is presented graphically below[43].

[43] Equally it is in principle possible to construct a similar scale for those organisations that contemplate (or will be in the next short term period of up to two years) the above described measures (scale items). The items in this

The online organisation website accessibility / user friendliness scale (score 0-5 example)




Note: some ex-post analysis will be required to ensure that appropriate scale items are included

case would include: considering to introduce FAQ section, considering implementing Design for all principle, and considering implementing WAI guidelines (a three point scale is envisaged at this point).

It would be useful to summarise the above outlined indicators. The table below lists the main topic and subtopic areas for which indicators have been outlined, together with a selection of indicators which are being developed and operationalised down to the level of survey questions to be piloted in SIBIS (the table includes the indicators being suggested for the uptake).

| **Thematic Domain** | **Sub-topics** | | **Selected new indicators** | **Being piloted / developed for SIBIS surveys** |
|---|---|---|---|---|
| ***Social Inclusion and the Information Society*** | Identifying vulnerable / 'at risk' groups and individuals[44] | | Quantifying differential levels of access / Use of ICTs by 'traditionally' disadvantaged groups in society (various socio-demographic variables are used to capture this diverse and multi-categorical grouping – e.g.<br>Use (Internet/mobile telephone) by income level and income change –i.e. whether the income has increased / decrease/ remained steady over time<br>Use by presence of a disability / limiting condition,<br>Use by education level,<br>Use by employment situation, age and gender. | GPS |
| | | | Regional aspects of use of ICTs (e.g. ICTs in localities of different size bands) | GPS |
| | | | Usage of ICTs by ethnic minority groups | Not included in SIBIS surveys |
| | Access defined in broad terms ( Topic definition) | Access - - nominal access | Differential levels of access in terms of speed ( of access relevant technology) | GPS |
| | | | Individual perceptions regarding the access possibilities for using the Internet | GPS |
| | | Access – skills required | Individual perceptions regarding the level of skills required for using the Internet | GPS |
| | | | Ability to locate / source information on the Internet | GPS |
| | | | Ability to utilise Internet-based / associated modes of communication ( e.g. Using the Internet for making telephone calls) | GPS |
| | | Access – accessibility ( of the Internet) | Corporate website accessibility for people with disabilities /special needs; with limited dexterities and literacy<br>Corporate website and a possibility to adapt the site to take into account the special needs./ user requirements [proxy for the principle of Design for All]<br>Corporate website being developed with regard to [proxy for] Web Accessibility Initiative<br>Likelihood of corporate website accessibility being evaluated (internally / externally) | DMS |
| | | Access awareness | Perceptions regarding the ease of access to the internet (a variation of existing indicators) | GPS |
| | | | Usage of PIAPS / free internet access points | GPS |
| | | | Usage of PIAPS / free internet access points for starting community / civic networks | Not included in SIBIS surveys |

[44] Although broadly similar to classic indicators aimed at identifying the individuals and groups at risk of traditional exclusion, these indicators are nevertheless necessary to fully examine the digital divide 'fault' lines.

| | | | | |
|---|---|---|---|---|
| | | | Suitability of PIAPS / free internet access points for starting / sustaining community / civic networks | Not included in SIBIS surveys |
| | | Access – boosting local access [45] | Existence, nature and endurance of e-gateways at local / community level | Not included in SIBIS surveys |
| | | Access – affordability | Perceptions regarding affordability of Internet access at home (a variation of existing indicators) | GPS |
| | Rationale for participation [in the Information Society] | | The spread / density of community / civic networks | GPS |
| | Perceived benefits of participation | | Perceptions regarding usefulness of the internet for an individual | GPS |
| | Sustainability [ of participation in the Information Society] | | Share of lapsed Internet users / non-users | GPS |
| | | | Assessment of detrimental impact of not having option to use the Internet on individual's perception regarding social enfranchisement | GPS |
| | | | Interactive / reciprocal information flows - Ability to provide information about self over the Internet via creating personal WebPages | GPS |
| | | | Pervasiveness of Internet associated modes of communication for social / community purposes (e.g. diffusion of e-mail based communication amongst friends) | GPS |
| | | | ICT role in reinforcing the existing communities / community initiatives | Not included in SIBIS surveys |
| | | | The spread of virtual communities (e.g. single or multi-issue discussion forums, etc) & communities on line | Not included in SIBIS surveys |
| | | | The diffusion of the Internet in Voluntary and NGO sector; and the level of support services | Not included in SIBIS surveys |

Note – a similar albeit a shorter version was presented in the executive summary

[45] Not specifically identified as a separate subtopic in matrix, but its relevance can be inferred from the report.

The work outlined on the pages above is to a large extent based on the subtopic indicators typologies. These are presented below, while detailed indicator description is available in Annex 3.2, subsection 3.2.2

**Table 2-2. Indicator typologies tables by sub-topic identified (including indicators in development)**

| A1 – identifying the vulnerable - Continuity vs. change | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A1.1.a | Educational attainment ( various indicators related to individuals can be collected - not specified here)[46] | Yes |
| A1.1.b | Rate of early-school leavers not in further education or training | Yes |
| A1.2.a | Labour market situation of the household | Yes |
| A1.2.b | Inactive population who would like to work but think no job is available | Yes |
| A1.2.c | Employment Rate of Older People | Yes (limitations) |
| A1.3.a | Household income | |
| A1.3.b | Income poverty based on the income poverty line | Yes |
| A1.3.c | Distribution of income | Yes |
| A1.4.a | Educational level of the household | Yes |
| A1.4b | Population by age / age group | Yes |
| A1.5.a | Being hampered / limited in daily activities due to chronic health condition – definition by a proxy for people with disabilities | Yes |
| A1.5.b | Having physical or mental impairment that substantially limits one or more major life activities – having a disability | Yes but also still In development |
| A1.5.c | Existence of a longstanding health problem or disability | In development[47] |
| A1.5.d | Internet access by disability status | Available in USA |
| A1.6.a | Availability of high speed access by residence (size of metropolitan area) | Yes |
| A1.6.b | Usage of high speed access by residence (size of metropolitan area) | In development |
| A1.7.a | Population by nationality | Yes |
| A1.8.a | Computer literate workforce | Yes |
| A1.8.b | Educational attainment conducive for ICT / IS participating skills | |
| A.1.8.c | Percentage of individuals who can be classified as “late adopters” | Yes (limitations) |
| A1.8.d | Computer training qualifications (for employed) | |
| A1.8.e | Place where basic computer user skills have been acquired | |
| A1.10.a | Social contacts – frequency | Yes |

[46] This issue will be resolved during the D2.2 where for example, an agreement can be reached on education indicators to be collected in surveys.

[47] Will be used in “ad hoc” Module / next LFS 2002.

| A2 – Access to ICTs and accessibility | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A2.1.a | A penetration of digital TV by income | Yes |
| A2.1.b | Rate of Internet coverage in schools | Yes |
| A2.1.c | Rate of Internet coverage in schools by affluence | In development |
| A2.1.d | Internet usage quantified, by household income levels | Yes , USA (limited) |
| A2.2.a | Public Internet Access Points (PIAPs) per 1000 inhabitants | Yes, some aspects still in development |
| A2.2b | Percentage of the population within 3-mile radius of public internet access points | Reportedly in development / being considered [IRL] |
| A2.2.c | Libraries offering Internet access to the public | In development |
| A2.3.a | Personal computer use experience by disability status | Yes In the US only |
| A2.4.a | Web accessibility assessment using the WAI guidelines | Piloted |
| A2.4.b | Web accessibility – user device independence | In development |
| A2.4.c | Web accessibility – source assistance for assistive technology users | In development |
| A2.4.d | Web accessibility test using the “Bobby-test” | In development |
| A2.4.e | Percentage of central government websites that conform to the WAI guidelines at A level | In development |
| A2.4.f | Percentage of central government websites that conform to the WAI guidelines at AA or AAA level | In development |
| A2.5.a | The existence of FAQ at the website | In development |
| A2.9a | Perception of affordability of the Internet and PCs | Limited |
| A2.10.a | How to bridge the digital divide in education / among schools? | In development |
| A2.10.b | Familiarity with the funding programme and reasons for not availing of the programme available to schools to bridge the digital divide | In development |
| A2.11 | Awareness regarding the Internet content | In development , various aspects |

| A3 Rationale for participation in the IS | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A3.1 | Internet content | In development |
| A3.1.a | Availability of multilingual content | In development |
| A3.1.b | Availability of online content suitable for users with relatively lower literacy level | In development |
| A3.1.c | Existence of online information focusing on / relevant for local community | In development |
| A3.1.d | Availability of culturally diverse content | In development |
| A3.6 | Use of the Internet for job-seeking | Yes |
| A3.7 | Vertical content preferences | In development |
| A3.7.a | Never connected households / not connected to the Internet | Yes, in USA |
| A3.7.b | Likelihood of going online / accessing the Internet | Yes: In USA |
| A3.7.c | Individuals’ perception of the Internet ( non users) | Yes, USA |
| A3.9a | Internet diffusion in the community and voluntary sector | In development |
| A3.12.a | Reasons for discontinuing internet service | Yes, USA |
| A3.12. b | Experience of using the Internet measured in time (e.g. years) | Yes (limitations) |

| **Title** | **A.1.3.a Household income** |
|---|---|
| **Definition** | Total net monetary income received by the household / its members at the time of the interview during the survey reference period (e.g. in the previous year, per annum basis) |
| **Notes** | Income comprises of income from work, private income (investments, property and private transfers), pensions, and social transfers.<br>Problems: comparability is difficult due to poor quality of data relating to income from self-employment, property income and private transfers. In addition, weighting procedures for different pats of income are complex. Therefore, it is suggested to ask for net after tax income on monthly (or in the case of UK and IRL, Weekly) basis. Comment: it is possible to use a wider, less intrusive scale then suggested bellow, but the trade off is a loss of nuanced information. Finally, for practical reasons, and perhaps consistent with suggestions that individual resources are more relevant and directly related to the Information Society issues, it might be decided to use an individual income assessment rather than a household level one. In any case, the individual income can be arrived at by averaging income across household members |
| **Sources** | Eurostat, ECHP should hold comparable data |
| **SIBIS survey: Q and group to be asked** | Target group: GPS (General Population Survey)<br>Q: Could you give some indication of your household income[48] for the last year (prompts: net after taxation and including sources as per definition)? Please indicate the category along the following scale in euros where appropriate with a possibility to use 'old' domestic currency in euro zone if respondents find it easier to manage<br>• Less or more than income 1<br>• Less or more than income 2<br>• Less or more than income 3<br>• Less or more than income 4<br>• Etc |
| **Eeurope relevance** | • 2b – general indicator for topic 'Working in the knowledge based economy' |

[48] Definition of income i.e. what comprises it can be provided

| **Title** | **A.1.3. c Household income change over time** |
|---|---|
| **Definition** | Total net monetary income received by the household and its members at the time of the interview during the survey reference period ( e.g. over the last three year period , on per annum basis) |
| **Notes** | It is envisaged as a follow up on the main income question. Failing to gain any answer here, it can be used as a close proxy for this. Comment: It is possible to expand the three point scale suggested below with the additional 'intermediate' categories : d) has increased significantly and e) has decreased significantly |
| **Sources** | Similar indicators from Eurostat, ECHP |
| **SIBIS survey: Q and group to be asked** | Target group: GPS (General Population Survey)<br>Q:<br>Could you offer some indication as to whether and how your household income changed over the last three years. Please select one of the following:<br>a) it remained fairly constant in real terms, e.g. in line with inflation / cost of living<br>b) has increased (somewhat)<br>c) has decreased (somewhat) |
| **Eeurope relevance** | • 2b.6 – general indicator for participation for all in the knowledge–based economy (and society) |

# 3 Appendices

## 3.1 Annex I Overview of policy documents and reports on social inclusion and the information society

This chapter reviews policy documents of relevance to the topic from a variety of sources, starting from supranational level down to individual member state level and other countries such as the USA. It was also decided to include some reports from the US in this section and give just a brief overview of them. The main rationale for this was twofold – some of these documents have become available since the completion of the WP1 (and did not feature there) while the others effectively represent an analysis of policy relevant programmes (e.g. E-Rate Program). In addition, we also sought to satisfy the need to cover advanced or leading countries in the topic area. We are not making a judgement call that the US are more advanced than Europe in relation to info-inclusion – rather we are saying that the research carried justified it inclusion here. An overview matrix containing documents discussed in this chapter is provided below. Then the documents are grouped according to their origin and political constituency /area coverage and briefly outlined subsequently. The discussion is organised in such a way to follow issues as well as the order of the documents.

**Figure 3-1. Documents & reports overview table**

| No. | Title of document | Author | Region | Year | Type of document * |
|---|---|---|---|---|---|
| 1. | Building the European Information Society for us all – Final policy report of the high-level expert group | EC | EU | 1997 | Report / Action Plan |
| 2. | *Benchmarking Report following-up the "Strategies for jobs in the Information Society*", Commission staff working document | Commission of European Communities | EU | 2001 | Report |
| 3. | Scientific and Technological Options Assessment – Participation of Disabled and Elderly in the Information Society | Commissioned by the European Parliament | EU | 1996 | Evaluation / Action plan |
| 4. | *e*Europe 2002 – An Information Society for All | EC, EU Council | EU | 2000 | Action Plan |
| 5. | "Towards a barrier free Europe for People with Disabilities", Communication from the Commission to the Council, the European Parliament, The Economic and Social Committee of the Regions | Commission of European Communities | EU | 2000 | Action Plan |
| 6. | Communication from the Commission to the Council, the European Parliament, The Economic and Social Committee of the Regions – An evaluation of the Bridge Phase of TIDE ( Technology Initiative for Disabled and Elderly people) | Commission of European Communities | EU | 2000 | Communication / Evaluation |
| 7. | Mainstreaming *e*particiaption of disabled people in the *e*Europe action plan | European Disability Forum | EU | 2000 | Communication / Action Plan |
| 8. | Universal service and users' rights relating to electronic communications networks and services | European Disability Forum | EU | 2000 | Communication / Action Plan |

| No. | Title of document | Author | Region | Year | Type of document * |
|---|---|---|---|---|---|
| 9. | EDF response to *1999 Telecommunications review* | European Disability Forum | EU | 2000 | Communication / Action Plan |
| 10. | The social situation in the EU 2000 | EC / Eurostat | EU | 2001 | Documentation / Report |
| 11. | Information and Communication Technology in Special Education | UNESCO | | 2001 | Report |
| 12. | Falling Through the Net: Toward Digital Inclusion, A report on Americans' Access to Technology Tools | U.S. Department of Commerce | USA | 2000 | Report |
| 13. | On-line Content for Low-Income and Undeserved Americans – The Digital Divide's New Frontier | US NGO | USA | 2000 | Report |
| 14. | The Dollar Divide | Media Metrix | USA | 2000 | Report |
| 15. | Who is not online | Pew Internet and American Life Project, USA | USA | 2000 | Report |
| 16. | Connecting California Children – Is E-Rate Enough | Latino Issues Forum, USA | USA | 2001 | Report |
| 17. | International ICT Benchmark 2000 | Dutch Government | The Netherlands | 2000 | Report |
| 18. | The Dutch Digital Delta – The Netherlands on-line | Dutch Government | The Netherlands | 1999 | Action Plan |
| 19. | Web tilgængelighed I 1999 (Access to the Web in 1999)<br>An analysis of the access to 256 main public and private homepages for disabled people | Danish Center for ligebehandling af Handicappede | Denmark | 1999 | Evaluation |
| 20. | Digital Denmark – Conversion to the Network Society | Danish government (commissioned project) | Denmark | 1999 | Evaluation / Action Plan |
| 21. | A future-proof IT infrastructure for Sweden | IT Commission | Sweden | 1999 | Action Plan |
| 22. | Implementing the Information Society in Ireland: an action plan | Irish Government | Ireland | 1999 | Action Plan |
| 23. | "Progress Implementing the Information Society". Third Report of the Inter-Departmental Implementation Group | Irish Government | Ireland | 2000 | Report |
| 24. | *IT Access for All*, Report of the Information Society Commission | Information Society Commission, Ireland | Ireland | 2000 | Report |
| 25. | *Information Society Ireland*, Third report of Ireland's Information Society Commission | Information Society Commission, Ireland | Ireland | 2000 | Report |
| 26. | *Recommended Guidelines for Public Sector Organisations*, Report of the Interdepartmental Group | Irish Government | Ireland | 1999 | Documentation |

| No. | Title of document | Author | Region | Year | Type of document * |
|---|---|---|---|---|---|
| 27. | Benchmarking Ireland in the Information Society, Report of the Information Society Commission | Information Society Commission, Ireland | Ireland | 2000 | Report |
| 28. | *Branching Out: a new Public Library Service* | Dept of the Environment and Local Government | Ireland | 1999 | Action Plan |
| 29. | *Joining Forces: Delivering Libraries & Information Services in the Information Age* | The Library Councli | Ireland | 2000 | Report / Action Plan |

* categories: Report, Documentation, Green Paper, Action Plan, Evaluation, Other

### *Policy documents at European level*

It is evident from the policy documents at the EU level, reviewed below, that policy makers are aware of multi-faceted nature of info-inclusion, that is to say of its broad-spectrum relevance evident in the issues such as accessing employment and related opportunities and actively participating in a modern society, as well as of its more specific relevance for particular, more vulnerable groups such as people with disabilities, the elderly, the members of minority groups, etc.

Building the European Information Society for us all – Final policy report of the high-level expert group has sought to offer a vision of "soft" information society, termed "knowledge society", largely built upon the notion of social embeddedness of technology[49] and technological change. The awareness of the information "haves" and "have-nots" has been demonstrated and the course of action identified, focusing on the need to avoid forcing the vulnerable groups and individuals having to adjust to the new technologies. Instead, technologies were to become better suited to eclectic human needs as a way to avoid creating info-exclusion. At more specific level, in terms of regional cohesion the deficit of information infrastructure in relation to less favoured and peripheral regions (the distinction was made here) has been identified as a problem that cannot be solved by simply extending the universal service obligation (USO), largely due to feasibility and profitability concerns. Neither was expected that the liberalisation of the market would offer fulfilment of the elusive "death of distance" concept. Another strategic aim was greater cohesion via enhancing employability by using the ICTs (and ESF programmes). A number of recommendations were also made, such as the need for involvement of target groups in the design, development and implementation of technologies, the need for specific groups targeting, and the need for a partnership approach in relation to the IS.

In its Benchmarking Report following-up the "Strategies for jobs in the Information Society", compiled with the assistance of ESDIS, the EC puts the main focus is on providing up-to-date findings on the impact of the Information Society on jobs and to contribute to providing guidelines and quantifiable data to eEurope Action Plan. The strategic aim is to achieve greater social cohesion, which is here inherently associated and even identified with inclusion, via promoting job opportunities and active participation in the Information Society.

The way forward in relation to the contemporary policy regarding participation of the groups and individuals vulnerable to info-exclusion, such as the elderly and people with disabilities, has been identified early enough in Scientific and Technological Options Assessment. It was ascertained that large efforts would be necessary in order to make the ICTs and the whole concept of the information society user-friendly, convivial and universal. The issues relevant

[49] Or SST (socially shaped technology) as known in sociology.

for accessibility were identified and included the design of services, the perceived and actual complexity, and the support and guidance to user. It was decided that the concept of universal service was needed, at least as a minimal standard accessible for all, and that it should be supported by tools available to policy makers such a legal and regulatory framework. It was also recognised that not all problems can be solved from purely technological perspective. The course of action envisaged can be described as a two pronged type focusing on removing barriers to participation (ideally by universal design) and assisting in surmounting these barriers.

The participation for all in the "knowledge society" and "knowledge based economy" remained an issue of paramount importance for the European policy makers, as it is evident in *e*Europe 2002 action plan. The main specific courses of action focused on legal and standard adherence ("Design for All" standards on accessibility of information technology products, adoption of Web Accessibility Initiative), coupled with the aim to establish and co-ordinate national centres of excellence in design-for-all area. At more general level, the aim is to design and support policies aimed at tackling info-exclusion.

In its action plan, "Towards a barrier free Europe for People with Disabilities", the Commission communicated its commitment and aspiration to ensure the Information Society developments will be promoting social inclusion. It recalls the Directive 98/10/EC on open network provision to voice telephony and universal services for telecommunication in a competitive environment, which urges the Member States to ensure access to all fixed PTS lines for people with disabilities / special needs. It cites its role in assigning a standardisation mandate to the European standardisation organisations, CEN, CENELEC and ETSI, which were invited to identify the specific needs for standardisation, aimed at ensuring better integration of elderly and disabled people in the Information Society. The document also considers Enabling technologies / Assistive technologies. It has noted that fragmented market in this area has not been always conducive for invention and leading role (AT industry participants are usually SMEs) which is compounded by a lack of supranational regulation / standardisation in the area. Therefore, the Commission has recognised the need to promote the AT industry and to support / enhance the market development in this area. There is also awareness that failing to do so could mean the permanent loss of this market to the US, where the AT industry has already been well buttressed by (mainly) legislature developments (1990 Americans with Disabilities Act and 1986 Rehabilitation Act). In addition, the size of the US market in itself is a natural advantage. The main stated objectives are:

- to promote and ensure accessibility as a way to increase the awareness of social and business actors
- to achieve a tangible progress in removing barriers facing people with disabilities, as well as to enhance the opportunities for participation in the Information Society

The Commission undertook to propose to the Council to declare the year 2003 as the European Year of Disabled Citizens in order to promote further awareness and the concept of full citizenship for this social group.

The document is related to the *e*Europe documents / initiatives dealing with *e*Europe actions, as well as other policy documents dealing with the issue of disability. The explicit reference has been made to the Treaty of Amsterdam, Article 13 which was a base for adoption of the anti-discrimination package covering, *inter alia,* disability.

The EC's concern about inclusion of groups vulnerable to info-exclusion in general, and continuing from the previous policy document, and its concern about creating an internal market in rehabilitation technology in Europe has also been demonstrated in evaluation document relating to the Technology Initiative for Disabled and Elderly People. Although precedes eEurope initiatives and its focus is on the projects and initiatives undertaken in the 1990s, the document is nevertheless relevant for eEurope actions (support for these was made explicit). The main issues that have arisen from this evaluation exercise concerned enhancing and broadening the perceptions of people with disabilities in relation to *enabling* potential of technology and the potential it has to positively improve their quality of life and enhance social participation. Although the ICTs were not the only technologies reviewed, this

issue is nevertheless relevant for SIBIS. Another area of concern was to reduce the gap between innovative research and its practical use, which should have positive connotations for the creation of a single market for rehabilitation and assistive technologies. Some of the principles that are used to evaluate projects in this area are also useful, *in principle*, for assessing the inclusiveness of information society from the perspective of people with disabilities. These include user-focused principle and multi-disciplinary approach principle to technology design and its use.

The *Mainstreaming e-particiaption of disabled people in the eEurope action plan* is a direct response the EU Commission's eEurope initiative. Although broadly welcoming the eEurope actions, the document seeks to commit policy makers to provide more specific details in relation to the funding of the initiatives proposed. The view has also been put forward in relation to the perceived way eEurope actions adopted rather narrow terms of reference by focusing on the access needs of people with disabilities in section 7 only (social inclusion topic / action), instead of trying to integrate them into all sections / policy areas. The main objective of the document is to promote and further the cause of the equality of outcome from participating in the Information Society. It is intended to achieve this aim by seeking to:

- promote and ensure accessibility principle for "access" theme to run through all eEurope actions / initiatives and to accelerate the standardisation process of the Design for All principle
- increase the potential for achieving a more inclusive information society
- foster a debate on eEurope-related actions

In its response to *1999 Telecommunications review*, the EDF reminds us of increasing importance of assistive technologies and mainstream technologies for both people with disabilities and increasing number of senior citizens. The implications are clear – any information society related initiatives that fail to take account people with disabilities would inevitably contribute to the social exclusion of this large part of the population. Here, and in related document (EDF's response to DG Information society working document *Universal service and user's rights relating to electronic communications networks and services,* the attention has been drawn on some real life needs and issues pertinent to people with disabilities. These are: the need to apply pricing principles to the services in order to make them affordable to the people with disabilities (this affordability / access principle is of course is relevant to all vulnerable and less well of groups and individuals); ensuring that every line in the telecommunications (e.g. terminals) chain are fully accessible; seeking to provide text and video relay services addressed to people with hearing and speech difficulties; and ensuring that electronic interaction between policy makers and vulnerable groups can take place.

"The social situation in the European Union" (now published annually, e.g. *The social situation in the EU 2000*) presents data from a number of sources including the EU Labour Force Survey in the area of employment. For preparing the document, fifteen key indicators were selected to describe the social situation in the EU, based a number of EU legislative and policy papers.

Among the EU policy documents not mentioned yet, the most important are those relating to the eEurope initiative launched in December 1999, in particular the eEurope Action Plan from June 2000 (see SIBIS deliverables 1.2 and 1.3)

### *Policy documents from the UN*

The United Nation's Educational, Scientific and Cultural Organisation (UNESCO) report on ICT usage in special education seeks to further the cause of people with disabilities in relation to improving their chances to acquire good education. The focus of the report is to support the introduction and dissemination of technological solutions that can be used to this aim. This is done through the project "ICTs in Education for People with Special Needs", which specifically seeks to provide this group of people with an access to relevant electronic educational

materials. The leading concept is to make information non-modality specific, that is to say to remove its inherent connection to its form of presentation (e.g. audio, visual, etc.). *Prosthetic* uses to which ICTs can be put are designed to surmount barriers facing the people with disabilities. This includes their access to text, graphics, writing, speaking and face to face communication.

### *Policy documents and relevant statistical reports from the USA*

Given the dominance of hands-on approach to the policy making in the US, this subsection contains what really and essentially are statistical reports. However, given the somewhat different approach to policy making / influencing in the US, it is deemed that their inclusion here is justified. Probably the most comprehensive document to come from the US is *Falling Through the Net: Toward Digital Inclusion*, a report based on data gathered to assist monitoring and promoting digital inclusion / participation in digital economy. It contains the theme that runs through all sub-domains of the topic, that is to say, the focus is on identifying the gap in access to the ICTs between various individuals and groups – the differences in the shares of each group that is digitally connected. In this case, the ICTs are conceptualised as the Internet and the extent of digital inclusion is examined by looking at households and individuals that have a computer and an Internet connection. The concept of "Access" is "unpacked" somewhat and examination of the diffusion of a high-speed access is introduced, while access for people with disabilities was also examined in detail. One of the most relevant and encouraging findings of the report would be that albeit still evident, the digital divide is apparently narrowing.

The issue of digital divide is dominant in other reports too, acknowledging the digital divide between those who have access to online information and opportunities and those who do not. One of such reports is *Online Content for Low-Income and Undeserved Americans*. The report re-uses the term "underserved"[50] to denote the individuals, households and groups that are at a relative disadvantage in relation to digital access and usage. The *underserved (as opposed to undeserved)* population, which comprises of people on low incomes, living in rural communities, have limited education, or are members of racial and / or ethnic minorities[51]. More importantly, the report seeks to examine the digital divide in a new way, by examining the content created and available on the Internet, rather than just examining the access in quantitative / physical terms. The content is examined in the way to assess its usefulness to low income and *underserved* population, primarily by auditing employment and education potential of the Internet content, examining the ease with which the information offered can be clearly understood by limited literacy users, the availability of multi-language content and examining opportunities to create content and interact in a way that takes account of cultural context of the users too. Therefore the broad objectives of the report, which can also be seen as a strategic audit) are following:

- To describe in more detail the groups that are not adequately served by Internet content currently available, to understand the needs of these groups better, and to identify the barriers they face
- To analyse the online content that is currently available for underserved Americans with the aim of identifying gaps that can be bridged
- To provide recommendation for public and private sector providing the content to make it more relevant and useful for those at risk from being excluded from the benefits of the information society

The most important deficiencies of currently available online content in the US are, according to this report: lack of locally relevant information (the type of information that can be used purposefully by the local communities), literacy barriers (that is to say, the online content is

[50] The term originated in early 1990s in the American literature on the Information Society.

[51] Although excludes people with disabilities, the methodology of identifying the groups at risk from digital exclusion broadly corresponds with ours, and is consistent with the sub-domain "continuity vs. change"

skewed towards the users whose literacy skills / levels are higher than average), noted limitations in multilingual content, and lack of significant examples of cultural information availability at the local level. Crucially, the report found that the information most often requested / likely to be requested by the users was the one that has proved the most difficult to find.

The relevance of traditional approach to identifying the groups and individuals at risk from digital exclusion has been reinforced in the report titled *The Dollar Divide – Demographic Segmentation and Web Usage Patterns by Household Income.* It offers another proof that the overall composition of the web is still skewed towards a higher income user base, although some gradual reduction in digital divide has been found (this reduction has been attributed to the reduction in PCs, increased ease of use of ICTs, and improvements in relation to the access to the Internet for professionals, academics and communities). The report highlights a relevant issue for quantifying inline connectivity – it was found that lower income users spend more time online than their higher income counterparts, which is evident of the gap in late and early adoptors' ability to use ICTs in a streamlined and more focused fashion. Online preferences in terms of sites visited / used also differed.

The relevance of equal access to ICTs in education (related to equality of info-opportunity) has been highlighted in the report titled *Is E-rate Enough?* , by Latino Issues Forum. The report aims to contribute towards closing of the digital divide in education system (and thus can be seen as tackling an early info-disadvantage). It evaluates the "E-rate program" which is a popular name for The Universal Service Fund for Schools and Libraries, designed to [re] address the ICT inequalities in nation's schools[52]. The findings of the report are a sombre reminder for policy makers that digital divide can occur in the midst of plenty (the state of California is a leading state / region in computer and Internet usage). Despite its prosperity, California's digital divide is discernible in education (schools from poorer neighbourhoods and whose pupils are born to ethnic minorities lag behind), but also in wider population along the similar lines. Paradoxically, there was lack of information regarding the "E-rate program", and there were noted infrastructure-related deficiencies preventing the effective usage of the programme.

### *Policy documents on the Member State level*

In this subsection, only a few policy documents from selected countries can be mentioned. The preference and more space will be given to some of these that have not been reviewed in detail previously.

Every EU Member State (and most OECD countries), albeit to the varying extent, have published high-level documents describing some of the key challenges arising out of current developments in relation to the information society, aiming to design and publicise adequate policy approaches aimed at tackling digital divide. These have been listed already in SIBIS deliverables 1.2 and 1.3. Below are summaries of some relevant documents that also follow our general approach to the topic as elaborated in chapter one.

In the Netherlands, the issue of access and skills, as a precondition for digital inclusion, has been given due space in the report by the Dutch government, *International ICT Benchmarking 2000.* The report states the objectives of government's initiative, The Dutch Digital Delta, in this regard, namely to enable citizens to gain access to new electronic media and gain relevant skills to do so. The related report, *The Dutch Digital Delta – The Netherlands On-Line,* restates the importance of lateral diffusion of access and skills for reducing digital divide.

One of the relevant issues elaborated in chapter one is accessibility of the information society. The report by the Danish Centre for people with disabilities (1999) is effectively an evaluation

[52] The programme receives federal funding and is designed to provide discounts to schools and libraries aimed at assisting them to install and maintain Internet and other ICTs. Schools receive discounts on basic local and long distance phone services, Internet access, and network wiring but not for purchasing hardware or software or for technical training.

of this. It presents the results of an examination of 256 public and private web sites from 1999. The main area of concern is access for blind and weak-sighted people and web accessibility tests, such as "the Bobby-test", have been used. The evaluation undertaken has a time series element to it and it can also be seen as a process evaluation, since it seeks to compare data on accessibility with the previous year, examining whether the progress regarding access and user friendliness of official national web sites and county- and municipality web sites can be seen. The main objective therefore was to examine the *progress* in the area of accessibility and user friendliness of web sites and to provide another quality focus for the web designers. Importantly, it is planned to extend this evaluation exercise and to recommend making access for disabled an indicator for general quality tests of web sites.

The report titled *Digital Denmark - Conversion to the network Society* has a much wider focus and is aimed at influencing broad policy making. However, the strategies and policies aimed at those at risk from digital disadvantage are also contained here, consistent with the proclaimed policy aim to achieve a fully networked society (with all associated efficiencies) while maintaining (and enhancing) welfare society values. One such initiative is a strategy for Danish Language technologies. Having recognised that the Danish language area is small and that the availability of advanced speech and other assistive technologies might be constrained by this, the action has been directed towards developing an overall strategy for Danish language and speech technologies that will take into account the latest IT developments and seek to overcome the limitations of small market size. Another relevant initiative relates to providing the unemployed and those at risk from unemployment (some of this inevitably is due to the information society led economic restructuring) with IT skills.

In Sweden, a relevant initiative (A future-proof infrastructure for Sweden) to enhance access for all deals with development of a new broadband infrastructure. Although effectively a "blanket" approach, the initiative is relevant for digital divide since it seeks to eliminate a barrier related to the high cost of online connectivity. The aim is to enable all to gain access to ICTs on *reasonable* and much improved terms.

Policy documents dealing with social inclusion and the information society published in Ireland show an awareness of potential and actual digital divide and the need to prevent it and tackle it. The strategy to be followed in relation to benefiting from the information society has been outlined in the document titled *Implementing the Information Society in Ireland ; an Action Plan* . The main objectives relevant for digital inclusion include: ensuring that PCs, ISDN connections and internet access are installed in every public library, supporting the department of Social Affairs in its programme focusing on providing computer and training facilities to the community and voluntary organisations, measures aimed at extending PC/ Internet access via nation-wide networks such as schools, post offices, use of dedicated kiosks, and adoption of quality standards for public service websites (good practice to incorporate the special needs of the elderly and people with disabilities – it has been proposed that the special government body called National Disability Authority be invited to monitor standards in this area). The progress made in implementing this action plan has been monitored on annual basis, hence three reports evaluating the *Progress Implementing the Information Society* by the Inter-departmental groups. Access enhancing measures included free internet access to the public in local libraries (the number of PCs with internet access in public libraries have reached 1,000 by April 2000), while kiosks providing on-line access to the FAS service (government training and employment agency) have been installed in social welfare Offices, the main aim been to enhance the employment prospects of social welfare claimants. Info-inclusion remained high on the agenda of Irish policy makers and is present in each of the policy documents reviewed, mostly compiled by the Information Society Commission. Another common theme that is discernible in the reports by the Information Society Commission is an objective to make technology more relevant to all groups and individuals as a way of creating more inclusive information society.

Positive developments have been initiated in relation to the accessibility of websites by publishing Recommended Guidelines for Public Sector Organisations. The aim was to promote user-centred website design, common look and feel for all government websites (e.g. common navigation bar with links to home page, service directory, contents / site map and search facility), and in general, to promote user friendliness (e.g. providing a link to Adobe Acrobat Reader for downloading PDF files, avoiding gratuitous bells and whistles that do not

add functionality, etc.) and accessibility for people with disabilities (e.g. recommendation to put site through the “Bobby Test”).

In the Irish context, it is relevant to mention the role played by public libraries in relation to enhancing info-inclusion. Thus the report *Branching Out: A new Public Library Service* emphasised the potential of the public library service to enhance *access* to information by relying on ICTs, for making new avenues for social inclusion via provision of ICT related skills-training and via supporting the concept of life long learning through library collections and services and via enhancing the delivery of government services using ICT infrastructure in libraries. One of the main aims of the report was to ensure better ICT infrastructure for libraries including hardware, software and training. More specifically, ISDN Internet connection provisions for every library and universal e-mail access for citizens via public library system were at the core here. It is in public libraries that general public can access the Internet and about 1,000 access points have been established in Ireland, with all relevant connotations for access (e.g. affordability – free access). The strategic role of libraries in relation to delivering an inclusive Information Society has been emphasised in the *Joining Forces* report by the Library council. The report aimed to make recommendations on a national policy relating to development of library and related information services and to identify and prioritise targets to be achieved. These targets included access to public access network (PAN) with the following content: eGovernment, website for public service and voluntary and community organisations, consumer health information, information relating to education institutions (second and third level) and digitised cultural and heritage information. Thus developing and delivering PAN that is conducive to info-inclusion was identified as the main aim of this report.

## *3.2 Annex II Review of existing and innovative indicators and indicators description in detail*

### 3.2.1 Main data sources

It is possible to divide data sources into two groups. The first group comprises major sources available at the EU level, containing data that are relevant for identifying the groups and individuals who are at risk from info-exclusion are traditional sources like employment-related data sources for EU Member States such as Labour Force Survey (LFS). Similar source relevant for this is the European Community Household Panel Survey. The LFS was carried out annually from 1983 (Spain and Portugal 1986/7, Austria, Sweden and Finland 1995) to 1999 and is now carried out quarterly. The ECHP surveys have been carried out in three waves.

*Major sources for data on the use of ISTs related to the topic are Eurobarometer (in particular "54.0 - Europeans, Information and Communication Technologies and Employment" from November 2000 survey)*

The second groups comprises data sources from mainly once off statistical reports that relate to the topic. In many aspects these contain indicators that can be termed innovative although most of them are arrived at by combining “traditional” indicators related to the individuals and groups most at risk form social exclusion with ICT access and usage indicators.

Also relevant are the 23 indicators as the key-indicators to benchmark the progress of eEurope, explicitly linked to the *e*Europe Action Plan. The indicators are designed to be a tool for measuring the progress of the eEurope Action Plan in the Member States. For each indicator the following information is given: definition, source, frequency, supplementary indicators. Most of the indicators are based on data delivered by the Eurobarometer surveys.

The main sources of data are summarised in the table below.

| Name of data source (Acronym) | Main Publication(s) of Interest for SIBIS | Description (incl. target, survey unit) | Responsible | Country Coverage | Year | |
|---|---|---|---|---|---|---|
| | | | | | freq. | last |
| Standard Eurobarometer survey | Eurobarometer survey 54.0 - "Europeans, Information and Communication Technologies and Employment", Final report (2001); Les europeens et les technologies de l'information et de la communication dans le cadre de L'emploi (2001) | GPS | EC; INRA | EU | 2x per annum | 11/00 (54.0) |
| European Community Household Panel Survey (ECHP) | | GPS | Eurostat with NSA | EU | Three waves | 1996 |
| Theme three Population and social conditions | European Social Statistics : Income, Poverty and Social Inclusion | GPS | Eurostat | EU | | 2000 |
| EU Labour Force Survey (LFS) | European Social Statistics – Labour Force 1999 (2000) | GPS[53] | EU | EU | annual (quart. since 1999) | 2000 |
| List of *e*Europe Benchmarking Indicators | ESIS, | GPS, DMS | Eurostat | EU | Annual? | |
| ESIS | Information Society indicators in the Member States of the EU | | SEMA Group / DG Information Society | EU | | 2000 |
| Flash Eurobarometer 88 – Internet for the General Public | FLASH EB N°88 «Internet et le Grand Public» (10-30/10/2000) – Rapport p. 1 (2001)[54] | GPS | Eurostat/ Gallup Europe | EU | once-off | 11/2000 |

[53] Household sample survey (quarterly since 1999); respondent is reporting also on other members of the household (proxy interview)

[54] http://europa.eu.int/ISPO/basics/measuring/eurobaro/eurobaro88/i_eurobaro88.html

| Name of data source (Acronym) | Main Publication(s) of Interest for SIBIS | Description (incl. target, survey unit) | Responsible | Country Coverage | Year | |
|---|---|---|---|---|---|---|
| Latino Issues Forum | Is E-rate Enough | DMS, conditional | | USA | | 2001 |
| The Children's Partnership | Online Content for Low income and Underserved Americans | N/A | The Children's Partnership | USA | | 2000 |
| Media Metrix | The dollar divide | GPS | Media Metrix | USA | | 2000 |
| NTIA | Falling Through the Net: Defining the Digital Divide | GPS | US Dept of Commerce | USA | Annual (effectively now, since 1998) | 1999 |
| NTIA | Falling Through the Net: Toward Digital Inclusion | GPS | US Dept of Commerce | USA | Annual (effectively now) | 2000 |
| SIPP | Survey of Income and Program Participation | GPS (section) | US Dept of Commerce | USA | | 1999 |
| Pewinternet | Who is not online | GPS | Pew internet | USA | Once-off | 2000 |
| GAO | Characteristics and Choices of Internet Users | GMS | US General Accounting Office | USA | | 2001 |
| DANIEE | Seniors and IT | GPS | The Danish National Institute for Elderly Education | Denmark | Once off | 1998 |
| ESRI | Monitoring Poverty Trends and Exploring Poverty Dynamics in Ireland | GPS | ESRI | Ireland | | 2001 |
| ISC | Early and Late Adoptors of New Technology | GPS | Information Society Commission, Ireland | Ireland | | 2000 |

| Name of data source (Acronym) | Main Publication(s) of Interest for SIBIS | Description (incl. target, survey unit) | Responsible | Country Coverage | Year | |
|---|---|---|---|---|---|---|
| ISC | Benchmarking Ireland in the Information Society, Report of the Information Society Commission | GPS | Information Society Commission, Ireland | Ireland | | 2000 |
| SIQSS | Internet and Society – a preliminary report | GPS | Stanford Institute for the Quantitative Study of Society | USA | | |
| Survey on Employment Options for the Future | No full report available as yet | GPS | European Foundation | EU + Norway | 1998 | 2000 |

**Table 3-1. Indicator typologies tables by sub-topic identified (including indicators in development)**

| A1 – identifying the vulnerable - Continuity vs. change | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A1.1.a | Educational attainment ( various indicators related to individuals can be collected - not specified here)[55] | Yes |
| A1.1.b | Rate of early-school leavers not in further education or training | Yes |
| A1.2.a | Labour market situation of the household | Yes |
| A1.2.b | Inactive population who would like to work but think no job is available | Yes |
| A1.2.c | Employment Rate of Older People | Yes (limitations) |
| A1.3.a | Household income | |
| A1.3.b | Income poverty based on the income poverty line | Yes |
| A1.3.c | Distribution of income | Yes |
| A1.4.a | Educational level of the household | Yes |
| A1.4b | Population by age / age group | Yes |
| A1.5.a | Being hampered / limited in daily activities due to chronic health condition – definition by a proxy for people with disabilities | Yes |
| A1.5.b | Having physical or mental impairment that substantially limits one or more major life activities – having a disability | Yes but also still In development |
| A1.5.c | Existence of a longstanding health problem or disability | In development[56] |
| A1.5.d | Internet access by disability status | Available in USA |
| A1.6.a | Availability of high speed access by residence (size of metropolitan area) | Yes |
| A1.6.b | Usage of high speed access by residence (size of metropolitan area) | In development |
| A1.7.a | Population by nationality | Yes |
| A1.8.a | Computer literate workforce | Yes |
| A1.8.b | Educational attainment conducive for ICT / IS participating skills | |
| A.1.8.c | Percentage of individuals who can be classified as “late adopters” | Yes (limitations) |
| A1.8.d | Computer training qualifications (for employed) | |
| A1.8.e | Place where basic computer user skills have been acquired | |
| A1.10.a | Social contacts – frequency | Yes |

[55] This issue will be resolved during the D2.2 where for example, an agreement can be reached on education indicators to be collected in surveys.

[56] Will be used in “ad hoc” Module / next LFS 2002.

| A2 – Access to ICTs and accessibility | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A2.1.a | A penetration of digital TV by income | Yes |
| A2.1.b | Rate of Internet coverage in schools | yes |
| A2.1.c | Rate of Internet coverage in schools by affluence | In development |
| A2.1.d | Internet usage quantified, by household income levels | Yes , USA (limited) |
| A2.2.a | Public Internet Access Points (PIAPs) per 1000 inhabitants | Yes, some aspects still in development |
| A2.2b | Percentage of the population within 3-mile radius of public internet access points | In development / being considered |
| A2.2.c | Libraries offering Internet access to the public | In development |
| A2.3.a | Personal computer use experience by disability status | Yes In the US only |
| A2.4.a | Web accessibility assessment using the WAI guidelines | Piloted |
| A2.4.b | Web accessibility – user device independence | In development |
| A2.4.c | Web accessibility – source assistance for assistive technology users | In development |
| A2.4.d | Web accessibility test using the “Bobby-test” | In development |
| A2.4.e | Percentage of central government websites that conform to the WAI guidelines at A level | In development |
| A2.4.f | Percentage of central government websites that conform to the WAI guidelines at AA or AAA level | In development |
| A2.5.a | The existence of FAQ at the website | In development |
| A2.9a | Perception of affordability of the Internet and PCs | Limited |
| A2.10.a | How to bridge the digital divide in education / among schools? | In development |
| A2.10.b | Familiarity with the funding programme and reasons for not availing of the programme available to schools to bridge the digital divide | In development |
| A2. 11 | Awareness regarding the Internet content | Undeveloped |

| A3 Rationale for participation in the IS | | |
|---|---|---|
| **No.** | **Name of indicator** | **Availability** |
| A3.1 | Internet content | In development |
| A3.1.a | Availability of multilingual content | In development |
| A3.1.b | Availability of online content suitable for users with relatively lower literacy level | In development |
| A3.1.c | Existence of online information focusing on / relevant for local community | In development |
| A3.1.d | Availability of culturally diverse content | In development |
| A3.6 | Use of the Internet for job-seeking | Yes |
| A3.7 | Vertical content preferences | In development |
| A3.7.a | Never connected households / not connected to the Internet | Yes, in USA |
| A3.7.b | Likelihood of going online / accessing the Internet | Yes: In USA |
| A3.7.c | Individuals’ perception of the Internet ( non users) | Yes, USA |
| A3.9a | Internet diffusion in the community and voluntary sector | In development |
| A3.12.a | Reasons for discontinuing internet service | Yes, USA |
| A3.12. b | Experience of using the Internet measured in time (years) | Yes (limitations) |

### 3.2.2 Indicator descriptions in detail

| **Name of indicator** | **A1.1b Rate of early-school leavers not in further education or training** |
|---|---|
| Definition | Percentage of population of 18-24 years-old having achieved lower secondary education (ISCED level 2) or less and not attending further education or training |
| Notes | This indicator can be used to assess the policies relating to social inclusion via improving the equality of opportunity – using the "education" channel – a good level of basic education of school leavers will enhance their propensity to acquire relevant ICT skills, and to ensure their social and info-inclusion. The Lisbon European Council has also set a target of halving, by 2010, the number of 18-24 age group of early school leavers. |
| Sources | LFS |
| Countries covered | EU Member States |
| Time series available | Annual (quarterly since 1999) |
| eEurope relevance | • 2b-6.1 Policies to avoid info-exclusion<br>• 2b-6 relevant indicator for "participation for all in the knowledge-based economy [and society] " |
| Future value | Ensured |
| Links to other indicators | Also relevant for skills and education topics |

| **Name of indicator** | **A.1.2.a Labour market situation of the household** |
|---|---|
| Definition | Defined as:<br>• Working, if a household has at least one member who is working<br>• Unemployed, if a household has no working members and at least one member is unemployed<br>• Retired, if a household has no working or unemployed members and at least one member is retired<br>• Other inactive, if a household has no working, unemployed or retired members |
| Notes | Derived from survey GPS |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | 2b-5. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A1.2b Inactive population who would like to work but think no job is available** |
|---|---|
| Definition | Proportion of inactive population who would like to work but think no job is available;<br>Inactive persons are those aged 15 and older who are neither employed nor unemployed |
| Notes | Derived from survey (GPS) |
| Sources | Labour Force Survey |
| Countries covered | EU Member States |
| Time series available | Annual, quarterly since 1999 |
| eEurope relevance | • 2b-6 general indicator for 'participation for all in the knowledge based economy and [society]' |
| Future value | Relevant |
| Links to other indicators | Can be sued in conjunction with independent variables and ICT related variables |

| **Name of indicator** | **A1.2. c Employment Rate of Older People** |
|---|---|
| Definition | Persons in employment in age bracket 55-64 years as proportion (%) of total population in the same age bracket |
| Notes | Other sources can be consulted |
| Sources | European System of Accounts 1995 (ESA95)<br>See http://tilastokeskus.fi/tk/tp_db/astika/english/e42010.html |
| Countries covered | In all EU Member States; comparable with ILO/OECD sources. |
| Time series available | Annual |
| eEurope relevance | • 2b-6 – general indicator for topic 'participation for all in the knowledge based economy [and society]' |
| Future value | Ensured |
| Links to other indicators | Employment indicators |

| **Name of indicator** | **A.1.3.a Household income** |
|---|---|
| Definition | Total net monetary income received by the household and its members at the time of the interview (1996) during the survey reference period (1995) |
| Notes | Income comprises of income from work, private income (investments, property and private transfers), pensions, and social transfers. However, comparability is difficult due to poor quality of data relating to income from self-employment, property income and private transfers. In addition, weighting procedures used to arrive at household income differ from country to country, and some income sources are likely to be underestimated. |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 5. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | |

| **Name of indicator** | **A1.3.b Income poverty based on the income poverty line** |
|---|---|
| Definition | The income poverty line or low income threshold is based on the individual distribution of equivalised income and is set at 60% of its median equivalised income |
| Notes | This seems to be the best available relative poverty measure in the EU context |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 2b-6. General indicator for 'Participation for all in the knowledge based economy [ and society] |
| Future value | Relevant for identifying association between income poverty and info-exclusion |
| Links to other indicators | - |

| **Name of indicator** | **A.1.3.3 Persistent Income poverty based on the income poverty line** |
|---|---|
| Definition | Income poverty lasting at least three consecutive years |
| Notes | - |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 2b 6. General indicator for 'Participation for all in the knowledge based economy' |
| Future value | Relevant, e.g. since persistent income poverty is often related to accumulated info-exclusion |
| Links to other indicators | - |

| **Name of indicator** | **A.1.3.4 Income levels and change ( medium term)** |
|---|---|
| Definition | Income change in relation to the three recent consecutive years |
| Notes | - |
| Sources | Eurostat, ECHP, similar data |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Limited, although three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 2b 6. General indicator for 'Participation for all in the knowledge based economy' |
| Future value | Relevant, e.g. since persistent income poverty is often related to accumulated info-exclusion |
| Links to other indicators | - |

| **Name of indicator** | **A1.3.c Distribution of income (S80/S20)** |
|---|---|
| Definition | Ratio of the total income received by the 20% of the country's population with the highest income ( top quintile) to that received by the 20% of the country's population with the lowest income. (lowest quintile) |

| | |
|---|---|
| Notes | Social cohesion indicator. |
| Sources | Eurostat |
| Countries covered | EU Member States |
| Time series available | Uk |
| eEurope relevance | • 2b-6. General indicator for topic 'participation for all in the knowledge based economy [and society]' |
| Future value | Relevant |
| Links to other indicators | It might be useful for interpretation of data from other topics ( e.g. e-commerce, etc) |

| **Name of indicator** | **A1.4.a Educational level of the household** |
|---|---|
| Definition | The highest level of general education successfully completed by either the head of household or his partner. A distinction is made between low (less than second stage of secondary education – ISCED 0-2), middle (second stage of secondary education - ISCED-3) and high ( recognised third level education – ISCED 5-7) |
| Notes | Derived from survey GPS |
| Sources | ECHP, Eurostat |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 2 b 5. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | Can be used in conjunction with other indicators |

| **Name of indicator** | **A 1.4.b Population by age / age group** |
|---|---|
| Definition | The age of respondent is calculated from the year of birth; for persons born in the same year, those whose birthdays falls between 1st January and the end of the reference week are regarded as being one year older than those whose birthday fall after the end of the reference week. |
| Notes | The reference period for the purpose of Sibis can be the time of survey |
| Sources | LFS, (should also be available from national statistics offices) |
| Countries covered | EU Member States |
| Time series available | Annual since 1983, quarterly since 1999 |
| eEurope relevance | *2b* 5. General indicator for topic 'participation for all in the knowledge based economy [and society]' |
| Future value | Ensured |
| Links to other indicators | Can be used in conjunction with demographic variables (e.g. gender, income level) , also very relevant for life long learning |

| **Name of indicator** | **A.1.5.1a Being hampered / limited in daily activities due to chronic health condition – definition by a proxy for people with disabilities** |
|---|---|
| Definition | "Do you have any chronic physical or mental health problem, illness or disability? (if yes, then)<br>"Are you hampered in you daily activities by this chronic physical or mental health problem, illness or disability?"<br>(1) Yes, (2) Yes, to some extent, (3) No<br>If (1) or (2), then this person is defined as having a disability |
| Notes | Directly quoted from the questionnaire; self –assessment / self – evaluation is used; Sibis indicator in this are can be adapted from this one |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Limited, for Austria data for '95 and '96 are available, the filter question added in 1995 |
| eEurope relevance | • 2.b 5. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | Needs to be considered together with ICT usage indicators |

| **Name of indicator** | **A.1.5.1b Having physical or mental impairment that substantially limits one or more major life activities – having a disability** |
|---|---|
| Definition | Having any of the following:<br>Trouble walking, vision difficulties, hearing difficulties, difficulties using hands and fingers, learning disability (such as dyslexia), developmental disability, difficulty having their speech understood, using an ordinary telephone, condition that has made it difficult to remain employed, find a job or do work around the house, Alzheimer's disease or other serious problem with confusion or forgetfulness |
| Notes | Expanded using the concept of disability developed by the Americans with Disabilities Act (ADA) |
| Sources | Survey on Income and Program Participation, US census Bureau, |
| Countries covered | USA |
| Time series available | Uk. |
| eEurope relevance | • 2b 6. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | Needs to be considered together with ICT usage indicators, as done in the *Falling Through the Net – Toward Digital Inclusion* report |

| **Name of indicator** | **A 1.5.1c A presence of a longstanding health problem or disability** |
|---|---|
| Definition | Existence of a longstanding health problem or disability (Yes, No, Not applicable) |
| Notes | Originates from ad hoc module envisaged to take place in 2002. Designed as a filter question, the questions that follow it seek to obtain more detailed picture including the type of disability, the limitations it imposes and labour market experience of people with disabilities. |
| Sources | Eurostat |
| Countries covered | EU Member States |
| Time series available | Ad hoc ( current status) |
| eEurope relevance | • 2b-6. General indicator for topic 'participation for all in the knowledge based economy [and society]' |
| Future value | Relevant |
| Links to other indicators | Can be used in conjunction with other demographic variables (e.g. education, gender, income level) |

| **Name of indicator** | **A1.5.d Internet access by disability status** |
|---|---|
| Definition | Access to the Internet either at home, or elsewhere for the people with specific types of disabilities (any, difficulty walking, vision problems, hearing problems, difficulty using hands, a learning disability) |
| Notes | Access only gauged, availing of access at home is a different category / indicator[57]; |
| Sources | Survey on Income and Program Participation, US census Bureau, |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | Links with accessibility indicators for the Internet |

| **Name of indicator** | **A1.6.a Availability of high speed access by residence (size of metropolitan area)** |
|---|---|
| Definition | "Have you ever tried to get high-speed Internet access ( high-speed DSL service, high speed cable modem service, or wireless service) but been unable to?" (Select one) |
| Notes | Quoted from the report. The availability of high speed service can also be measured by gauging the awareness of it |
| Sources | GAO |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 participation for all in the knowledge-based economy [and society] |
| Future value | Relevant |

[57] As found, approximately 25% of those (people with disabilities) who in principle had access at home never used it

| | |
|---|---|
| Links to other indicators | Indicators measuring access in a technical sense |

| **Name of indicator** | **A1.6.b Usage of high speed access by residence (size of metropolitan area)** |
|---|---|
| Definition | "Which of the following do you most frequently use to access the Internet from your home? (Select one)<br>• Conventional dial up service provided by a telephone company<br>• High-speed "digital subscriber line" (or DSL) telephone service<br>• High-speed cable modem service (this includes using the cable modem as the downlink and a telephone line for the return path or uplink)<br>• Wireless service, for example, satellite service such as DirectPC, fixed wireless service such as Winstar or Teligent, or other wireless service |
| Notes | Quoted from the report. |
| Sources | GAO |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | 2b-6 participation for all in the knowledge-based economy and society<br>2b-6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | Technical access indicators |

| **Name of indicator** | **A 1.7.a Population by nationality** |
|---|---|
| | Nationality comprises three groups – nationals of the Member states concerned, non-nationals of the Member State who are nationals of one of the other Member State, and a third group comprising all other nationalities |
| Notes | Third group is not disintegrated, also nationals are not disintegrated by race / ethnic minority belonging / memebership |
| Sources | LFS (European social statistics – labour force survey results 1999) |
| Countries covered | EU Member States |
| Time series available | Annual (quarterly since 1999) |
| eEurope relevance | • 2b 5. General indicator for topic 'participation for all in the knowledge based economy [and society]' |
| Future value | Relevant, but needs to be more sensitive to minority groups |
| Links to other indicators | Can be used in conjunction with other demographic variables (e.g. education, gender, income level) |

| **Name of indicator** | **A.1.8.a Computer literate workforce** |
|---|---|
| Definition | Percentage of labour force that has received computer training (not specified in more detail) |
| Notes | See List of eEurope Benchmarking indicators (European Commission, 2000list): Indicator 11 |
| Sources | "Sample survey/ Eurobarometer" |
| Countries covered | EU Member States |
| Time series available | n.a. |
| eEurope relevance | • 2 b –6.1 Policies to avoid info-exclusion<br>• 2b 6 relevant indicator for "participation for all in the knowledge-based economy [and society] "<br>• 2b-5.1 – set up public Internet access points in public places and establish multimedia telecentres in all communities providing access to training and e-work facilities |
| Future value | Relevant |
| Links to other indicators | Employment / skills indicator |

| **Name of indicator** | **A1.8.b Educational attainment conducive for ICT / IS participating skills** |
|---|---|
| Definition | Percentage of population having attained at least upper secondary level |
| Notes | The positive relationship between education attainment and the propensity to acquire and use ICT relevant skills is the main issue here. This link is reinforced by the current curricula adopted by most of secondary school in the EU to comprise ICT skills. However, it is relevant only for relatively recent secondary school graduates. |
| Sources | LFS, (should also be available from national statistics offices) |
| Countries covered | EU Member States |
| Time series available | Annual since 1983, quarterly since 1999 |
| EEurope relevance | • *2b*-5. General indicator for topic 'participation for all in the knowledge based economy [and society]'<br>• 2b-5.1 Policies to avoid info-exclusion |
| Future value | Ensured |
| Links to other indicators | Can be used in conjunction with demographic variables (e.g. gender and age) , also very relevant for life long learning |

| **Name of indicator** | **A1.8.c Percentage of individuals who can be classified as "late adopters"** |
|---|---|
| Definition | Late adopters are those who are not familiar with many new information and communications technologies and do not use any |
| Notes | It can be defined in somewhat different way |
| Sources | Information Society Commission |
| Countries covered | IRL |
| Time series available | Yes limited ( 1998, 1999) |
| EEurope relevance | • 2b.6 participation for all in the knowledge-based economy [and society]<br>• 2b-6.1 policies to avoid info-exclusion |
| Future value | Relevant, some modifications will be required in future |
| Links to other indicators | ICT usage |

| **Name of indicator** | **A1.8.e Place where basic computer user skills have been acquired** |
|---|---|
| Definition | Share of employed persons who have acquired computer user skills at<br>"Where did you learn how to use a computer? […];<br>• At school<br>• At university<br>• At work on your own or with the assistance of colleagues<br>• At work in a training course organised in-house<br>• In a job placement<br>• At a meeting of a club or special interest group<br>• At a friend's place<br>• At home on your own<br>• In a training course paid for by your employer<br>• In a training course paid for by a government agency<br>• In a training course paid for by yourself<br>• In an Internet café/ a cybercafé<br>• In a public office or place like a library<br>• Other (SPONTANEOUS)"<br>Various composite indicators possible |
| Notes | Derives from survey (GPS) |
| Sources | Eurobarometer 54.0 / ESDIS |
| Countries covered | EU Member States |
| Time series available | Unknown |
| EEurope relevance | • 2b-6 – set up public Internet access points in public places and establish multimedia telecentres in all communities providing access to training and e-work facilities<br>• general indicator for "participation for all in the knowledge-based economy / [society] |
| Future value | "How to use a computer" is set to become too loose and wide in near future |
| Links to other indicators | Can be used in conjunction with relevant demographic variables |

| **Name of indicator** | **A1.8.d Computer training qualifications (employed)** |
|---|---|
| Definition | Share of employed persons who have formal computer-related training qualifications;<br>"Which, if any, of these computer training qualifications do you have?<br>• Degree in computer science<br>• School certificate in the use of computers<br>• Certificate in the use of computers from a public training institution<br>• Certificate in the use of computers from a private company<br>• Certificate in the use of computers as a result of distance learning<br>• Other (SPONTANEOUS)<br>• None (SPONTANEOUS)" |
| Notes | Info-inclusion vie employment; derived from survey (GPS) |
| Sources | Eurobarometer 54.0 / ESDIS |
| Countries covered | EU Member States |
| Time series available | n.a. |
| EEurope relevance | • General indicator for "participation for all in the knowledge-based economy / [society]<br>• 2b-6 – set up public Internet access points in public places and establish multimedia telecentres in all communities … |
| Future value | Still relevant although "Use of computers" might have to be specified is more detail / new categories might need to be introduced. |
| Links to other indicators | Info-inclusion via employment |

| **Name of indicator** | **A.1.10.a Social contacts – frequency** |
|---|---|
| Definition | "We would like to ask you how often do you meet people, whether here at your home or elsewhere. How often do you meet friends or relatives who are not living with you? (1) on most days (2) once or twice a week (3) once or twice a month (4) less than once a month (5) never |
| Notes | Directly quoted from the questionnaire; from the answering categories (4) and (5) , the following indicator is derived: "proportion of persons meeting friends or relatives less than once a month or never". Its original use is for measuring social exclusion / isolation, but it can be adapted for digital inclusion. Therefore the above indicator classification is tentative / illustrative only |
| Sources | Eurostat, ECHP |
| Countries covered | EU 12 (B, DK, D, EL, E, F, IRL, I, L, NL, A , P, UK) |
| Time series available | Yes, three waves, for Austria data for '95 and '96 are available |
| eEurope relevance | • 2 b 5. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | Can be combined with the frequency regarding virtual contacts |

| **Name of indicator** | **A2.1.a Penetration of digital TV by income** |
|---|---|
| Definition | |
| Notes | Need to accept / document / prove the notion that digital TV can diminish the digital divide |
| Sources | OECD, OFTEL |
| Countries covered | UK |
| Time series available | Uk. |
| eEurope relevance | • 2b-6 general indicator for "participation for all in the knowledge-based economy [ and society] |
| Future value | Currently a readiness indicator |
| Links to other indicators | Can be used in conjunction with other demographic, independent variables |

| **Name of indicator** | **A 2.1.b Rate of Internet coverage in schools** |
|---|---|
| Definition | Percentage of schools connected to the Internet by level (primary, secondary) |
| Notes | Too broad an indicator |
| Sources | LFS |
| Countries covered | EU Member States |
| Time series available | Annual (quarterly since 1999) |
| eEurope relevance | • 2b-6 – general indicator for participation for all in the knowledge based economy '[and society] |
| Future value | This is a readiness indicator |
| Links to other indicators | Education indicator |

| **Name of indicator** | **A 2.1.c Rate of Internet coverage in schools by affluence** |
|---|---|
| Definition | Percentage of schools connected to the Internet by the level of affluence of the area (e.g. parents' income can be a proxy for this) |
| Notes | The measure for the level of affluence needs to be agreed upon. In the US, the eligibility of pupils for specific social welfare measures (i.e. free or reduced price school lunch) have been used to determine the level of affluence. Another variable used was the level of school performance. In the European context, parents / household income could be considered. |
| Sources | Is E-rate enough, report by Latino Issues Forum, 2000 |
| Countries covered | USA |
| Time series available | No, however, different studies have examined the same issue in the US |
| eEurope relevance | • 2b-6 general indicator for the topic "participation for all in the knowledge based economy [and society]" |
| Future value | Relevant |
| Links to other indicators | Related to and part of "education" indicators |

| **Name of indicator** | **A 2.1.d Internet usage quantified , by household income levels** |
|---|---|
| Definition | The amount of time spent on the Internet per month by household income |
| Notes | |
| Sources | Media Metrix, similar indicator available from The US Department of Commerce based on CPS (census) |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for 'participation for all in the knowledge-based economy [and society]' |
| Future value | Relevant |
| Links to other indicators | Demographic indicator (s) a part of it |

| **Name of indicator** | **A2.2.a Public Internet Access Points (PIAPs)** |
|---|---|
| Definition | Public Internet Access Points (PIAPs) per 1000 inhabitants (more useful than absolute numbers of PIAPs);<br>PIAPs are "publicly provided centres providing access to the Internet regardless of their public and/or private provider and whether access is free or not though excluding fully private Internet cafés" |
| Notes | Problems might arise in relation to reliability of original data sources. New approaches to set up PIAPs vary from using government offices (Ireland), libraries (Belgium, Denmark, Finland, France, UK) post offices (France), employment services ( Austria, France, UK), centres for elderly (Spain) or in the streets of some cities ( Austria- Vienna, Italy – Bologna) [58], making this issue relevant for the future. |
| Sources | ESDIS; see List of eEurope Benchmarking indicators (European Commission, 2000list): Indicator 14; |
| Countries covered | B, DK, D, F, IRL, NL, A, FIN, S, UK |
| Time series available | Yes (but not clear if only for duration of eEurope initiative) |
| eEurope relevance | • 2b-5.6 – set up public Internet access points in public places and establish multimedia telecentres in all communities providing access to training and e-work facilities |
| Future value | Ensured as long as definition is clear and adequate |
| Links to other indicators | - |

| **Name of indicator** | **A 2.2.b Percentage of population living near Public Internet Access Points (PIAPs)** |
|---|---|
| Definition | PIAPs are "publicly provided centres providing access to the Internet regardless of their public and/or private provider and whether access is free or not though excluding fully private Internet cafés". Living near is taken to be up to 3 (three miles in radius. |
| Notes | Derived from ESDIS indicator, potential methodological problems might arise (e.g. with 3 miles defined as being universally "near"). |
| Sources | Information Society Commission |
| Countries covered | IRL (suggested) |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for "participation for all in the knowledge-based economy [ and society]<br>• 2b-5.6 – set up public Internet access points in public places and establish multimedia telecentres in all communities providing access to training and e-work facilities |
| Future value | Relevant as long as definition is clear and adequate, but data might be hard to obtain |
| Links to other indicators | - |

[58] Commission Staff Working Document, Benchmarking Report, ESDIS, 2001

| **Name of indicator** | **A 2.2c Libraries offering Internet access to the public** |
|---|---|
| Definition | Percentage of public libraries offering Internet access to the public |
| Notes | See List of eEurope Benchmarking indicators (European Commission, 2000list): Indicator 14 |
| Sources | ESDIS |
| Countries covered | EU Member States (data on some countries missing) |
| Time series available | Annual (proposed) |
| eEurope relevance | • 2b-6 – Promote policies to avoid info-exclusion … and exchange best practices between Member States |
| Future value | Ensured |
| Links to other indicators | - |

| **Name of indicator** | **A2.3.a Personal computer use experience by disability status** |
|---|---|
| Definition | The experience of using PC for people with and without disabilities by categories (1) uses a computer on regular basis, (2) not a regular user, (3) never used a computer |
| Notes | Can be expanded with the purpose of PC use |
| Sources | Survey on Income and Program Participation, US Census Bureau, |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b.6. Participation for all in the knowledge based economy |
| Future value | Relevant |
| Links to other indicators | |

| **Name of indicator** | **A 2.4.a Web accessibility assessment using the WAI guidelines** |
|---|---|
| Definition | Testing accessibility of websites (thus far mainly public ones) in terms of their conformity with the WAI guidelines |
| Notes | This is a technical indicator. |
| Sources | WAI and user agents |
| Countries covered | n.a. |
| Time series available | No |
| eEurope relevance | • 2b 6.2 Publication of “design for all” standards for accessibility of information technology products, in particular to improve the employability and social inclusion of people with special needs<br>• 2b 6.4 Adoption of the Web Accessibility Initiative (WAI) guidelines for public websites |
| Future value | Ensured |
| Links to other indicators | - |

| **Name of indicator** | **A 2.4.b Web accessibility – user device independence** |
|---|---|
| Definition | Deigning web pages in such a way to ensure that users are able to interact with mouse, keyboard, voice, head wand, etc |
| Notes | Assessment of individual web sites / portals needed. |
| Sources | Recommended Guidelines for Public Sector Organisations; Derived from WAI guidelines |
| Countries covered | IRL (some aspects ongoing for public sector) |
| Time series available | No |
| eEurope relevance | • 2b-6 participation for all in the knowledge-based economy [and society]<br>• 2b-6.4 Adoption of Web Accessibility Initiative guidelines for public websites<br>• 2b-6. 2 Publication of "Design for all" standards …to improve employability and social inclusion |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A 2.4.c Web accessibility – source assistance for assistive technology users** |
|---|---|
| Definition | Indication on the web pages regarding sources that will assist users with adaptive technologies to access a document in the format published |
| Notes | Assessment of web sites / portals needed. |
| Sources | Recommended Guidelines for Public Sector Organisations; Derived from WAI guidelines |
| Countries covered | IRL (ongoing) |
| Time series available | No |
| eEurope relevance | • 2b-6 participation for all in the knowledge-based economy [and society]<br>• 2b-6.4 Adoption of Web Accessibility Initiative guidelines for public websites<br>• 2b-6.2 Publication of "Design for all" standards …to improve employability and social inclusion… |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A2.4.d Web accessibility test using the "Bobby-test"** |
|---|---|
| Definition | Accessibility form the prospective of people with disabilities |
| Notes | This is a technical [readiness] indicator |
| Sources | Danish Centre for People with Disabilities (for the report using the indicator); source for the "Bobby test" – CAST (Centre for Applied Science and Technology) |
| Countries covered | n.a. |
| Time series available | No |
| eEurope relevance | • 2b 6.2 Publication of "design for all" standards for accessibility of information technology products, in particular to improve the employability and social inclusion of people with special needs<br>• 2b 6.4 Adoption of the Web Accessibility Initiative (WAI) guidelines for public websites |
| Future value | Ensured, at least in the short run and until all websites become accessible for people with disabilities |
| Links to other indicators | |

| **Name of indicator** | **A.2.4.e Percentage of central government websites that conform to the WAI accessibility guidelines at A level** |
|---|---|
| Definition | Definition of WAI accessible at A level is available – priority one; Central government sites were selected due to their relatively easier monitoring (e.g. in relation to local or regional government sites) |
| Notes | See List of eEurope Benchmarking indicators (European Commission, 2000list): Indicator 15 |
| Sources | ESDIS |
| Countries covered | EU Member States (data on some countries missing) |
| Time series available | Annual (proposed) |
| eEurope relevance | • 2b-6.1 – Promote policies to avoid info-exclusion … and exchange best practices between Member States<br>• 2b-6.4 – Adoption of the WAI guidelines for public websites |
| Future value | Ensured |
| Links to other indicators | - |

| **Name of indicator** | **A.2.4.f Percentage of central government websites that conform to the WAI accessibility guidelines at higher levels (Priority 2 and 3 or AA and AAA level)** |
|---|---|
| Definition | Definition of WAI accessible at higher levels is available – priority two and three; Central government sites were selected due to their relatively easier monitoring (e.g. in relation to local or regional government sites) |
| Notes | Proposed as supplementary indicator (s) , See List of eEurope Benchmarking indicators (European Commission, 2000list): Indicator 15 |
| Sources | ESDIS |
| Countries covered | EU Member States (data on some countries missing) |
| Time series available | Annual (proposed) |
| eEurope relevance | • 2b-6.1 – Promote policies to avoid info-exclusion … and exchange best practices between Member States<br>• 2b-6.4 – Adoption of the WAI guidelines for public websites |
| Future value | Ensured |
| Links to other indicators | - |

| **Name of indicator** | **A2.5.a The existence of frequently asked question feature on websites** |
|---|---|
| Definition | Relates to websites featuring FAQ ( frequently asked questions ) to enhance comprehensibility and user friendliness, especially in relation to the content |
| Notes | Derived from WAI guidelines |
| Sources | *Recommended Guidelines for Public Sector Organisations*, Report of the Interdepartmental Group, Ireland |
| Countries covered | IRL |
| Time series available | Uk. |
| eEurope relevance | • 2b-6 general indicator for "participation for all in the knowledge-based economy [ and society] |
| Future value | Can be used in conjunction with other WAI related indicators |
| Links to other indicators | |

| **Name of indicator** | **A 2.9.a Perceptions of affordability of the Internet and PCs - the price for obtaining the nominal access** |
|---|---|
| Definition | Defined as the costs of acquiring computer equipment and phone rates for using the Internet**.** The respondents were asked whether prices for acquiring computer equipment and for phone rates were perceived as being too high |
| Notes | Used for surveying one particular group – seniors (over 60 yers of age) |
| Sources | DANIEE |
| Countries covered | Denmark |
| Time series available | Uk. |
| eEurope relevance | • 2b-6 general indicator for "participation for all in the knowledge-based economy [ and society] |
| Future value | Relevant |
| Links to other indicators | Can be used in conjunction with other demographic, independent variables |

| **Name of indicator** | **A2.10.a How to bridge the digital divide in education / among schools?** |
|---|---|
| Definition | School Principals' perception of bridging the digital divide among schools –" What do schools need to bridge the Digital Divide?"<br>(1) more local, corporate business participation<br>(2) more community participation<br>(3) Increased funding for Internet<br>(4) More funds to purchase computers |
| Notes | Programme evaluation indicator, qualitative |
| Sources | Is E-rate enough |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for the topic "participation for all in the knowledge based economy [and society]" |
| Future value | Relevant |
| Links to other indicators | Related to and part of "education" indicators |

| **Name of indicator** | **A2.10.b Familiarity with the funding programme and reasons for not availing of the programme available to schools to bridge the digital divide** |
|---|---|
| Definition | School Principals' familiarity with the E-rate program<br>"Are you familiar with the E-rate program?<br>(1) No , never heard about it<br>(2) No but read up on it after receiving this survey<br>(3) Yes* if so, why didn't your school apply? |
| Notes | Programme evaluation indicator designed to evaluate the US programme. However similar methodology is / will be applicable to the EU. This was a follow up question addressed to the principals whose schools have not applied for funding under the programme |
| Sources | *Is E-rate enough*, Latino Issues Forum |
| Countries covered | USA (California) |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for the topic "participation for all in the knowledge based economy [and society]"<br>• 2b-6.1 policies to avoid info-exclusion will be more effectively co-ordinated at European level through benchmarking of performance and exchange of best practice between member states |
| Future value | Relevant, especially in relation to benchmarking and searching for of successful programmes |
| Links to other indicators | Related to and part of "education" indicators |

| **Name of indicator** | **A.3.7.a Never connected households / not connected to the Internet** |
|---|---|
| Definition | Reasons for households with a Computer / Web TV never accessing the Internet |
| Notes | Categories like cost (too expensive) , not user friendly, lack of ICT skills / ability to use, inadequate level of ICT equipment are more relevant for social inclusion. However, a note of caution is needed a reliance on other locations for access should be identified – if respondents can access the internet elsewhere, that is to say if they perceive they do not need connection at home due to this |
| Sources | US Dept of Commerce |
| Countries covered | USA |
| Time series available | Yes, limited |
| eEurope relevance | General relevance to 2-b.6 "participation for all in the knowledge-based economy [ and society] " |
| Future value | Ensured, and more relevant with diffusion of digital TV service |
| Links to other indicators | |

| **Name of indicator** | **A.3.7.b Likelihood of going online / accessing the Internet** |
|---|---|
| Definition | "How likely do you think it is, if at all, that you will start using the Internet or email someday – definitely, probably, probably not, or definitively not? |
| Notes | |
| Sources | Pew internet |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | General relevance to 2-b.6 "participation for all in the knowledge economy [and society]" |
| Future value | Ensured |
| Links to other indicators | Links with access indicators; also can be used in conjunction with demographic variables |

| **Name of indicator** | **A3.7.c Individuals' perception of the Internet ( non users)** |
|---|---|
| Definition | "Finally, here are some things people sometimes say about the Internet. Just based on what you have heard or read, please tell me whether you agree or disagree with each one. Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree?<br>a. I'm missing out on things by not using the Internet and email<br>b. The Internet is mostly a form of entertainment<br>c. The Internet would help me find out about things more easily<br>d. The Internet is a dangerous thing<br>e. The internet is confusing and hard to use<br>f. Internet access is too expensive |
| Notes | This can also be an awareness indicator as well as perception indicator |
| Sources | Pew internet |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | General relevance to 2.b 5 "participation for all in the knowledge-based economy [ and society]" |
| Future value | Ensured |
| Links to other indicators | |

| **Name of indicator** | **A.3.1 Internet content** |
|---|---|
| Definition | Online information / information source that encompasses the following categories:<br>• Previously available material now more widely available electronically<br>• Information that can be customised by the user<br>• Multi-source nature, that is to say flowing from many to many rather than being limited to uni-centred diffusion<br>• Information flows allowing interaction among users<br>• Information that enables users to become producers of information ( e.g. online tutorials) |
| Notes | Definition varies, but the above can be accepted for the moment as most relevant for the topic of info-inclusion.<br>It is really an index, with each part of definition being an individual indicator. This is an innovative indicator. Assessment of web sites / portals is needed. It can be, in principle [operationalised as ] qualitative and quantitative indicator. |
| Sources | Online Content for Low-Income and Underserved Americans |
| Countries covered | US |
| Time series available | No |
| eEurope relevance | 2b-6 participation for all in the knowledge-based economy [and society]<br>2b-6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | |

| **Name of indicator** | **A 3.1.a Availability of multilingual content** |
|---|---|
| Definition | Self-defined |
| Notes | Assessment of web sites / portals needed. A distinction might be made between EU sites and member state sites |
| Sources | Online Content for Low-Income and Underserved Americans |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | 2b.6 participation for all in the knowledge-based economy [and society]<br>2b 6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A3.1.b Availability of online content suitable for users with relatively lower literacy level** |
|---|---|
| Definition | Online content that can be used for both general and developmental need of adults with more limited literacy dexterity |
| Notes | Assessment of web sites / portals needed. Evaluation and classification problems might be encountered when attempting to use this indicator |
| Sources | Online Content for Low-Income and Underserved Americans |
| Countries covered | US |
| Time series available | No |
| eEurope relevance | 2b.6 participation for all in the knowledge-based economy [and society]<br>2b 6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A3.1.c Existence of online information focusing on local community** |
|---|---|
| Definition | Definition varies by the information type. In principle, it can be any practical community information |
| Notes | Assessment of web sites / portals needed, together with varied methodological approaches. It can be qualitative and quantitative indicator. For latter, and the later development of this indicator, it can be measured as proportion of content or juxtaposed with generalised information |
| Sources | Online Content for Low-Income and Underserved Americans |
| Countries covered | US |
| Time series available | No |
| eEurope relevance | 2b-6 general indicator for “participation for all in the knowledge-based economy [and society]”<br>2b-6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A.3.1.d Availability of culturally diverse content** |
|---|---|
| Definition | Self-defined |
| Notes | Assessment of web sites / portals needed. A distinction might be made between EU sites and member state sites |
| Sources | Online Content for Low-Income and Underserved Americans |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 participation for all in the knowledge-based economy [and society]<br>• 2b-6.1 policies to avoid info-exclusion |
| Future value | Relevant |
| Links to other indicators | - |

| **Name of indicator** | **A3.7 Vertical content preferences** |
|---|---|
| Definition | The type of websites, classified by their main featuring characteristics ( e.g. career, health, travel, auction, leisure sites) frequented by individuals in a given period of time |
| Notes | Needs to be combined with socio-economic variables (e.g. income level) to be meaningful. Methodological difficulties might arise |
| Sources | Media Metrix |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 participation for all in the knowledge-based economy [and society] |
| Future value | Relevant |
| Links to other indicators | |

| **Name of indicator** | **A.3.9.a Internet diffusion in the community and voluntary sector** |
|---|---|
| Definition | Percentage of community and voluntary sector organisations using the Internet |
| Notes | New indicator, no data gathered / published yet |
| Sources | Information Society Commission |
| Countries covered | IRL ( suggested) |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for “participation for all in the knowledge-based economy [ and society] |
| Future value | Relevant |
| Links to other indicators | Can be related to eGovernment / participation topic |

| **Name of indicator** | **A.3.6 Use of the Internet for job-seeking** |
|---|---|
| Definition | EUROBAROMETER 54.0: Do you use a computer? IF YES What do you use a computer for? Reply option: "… looking for a job on the Internet" |
| Notes | Derived from survey (GPS) |
| Sources | Eurobarometer 53.0, 54.0 |
| Countries covered | EU Member States |
| Time series available | - |
| eEurope relevance | • 2b-5.6 Set up PIAPs … in all communities providing access…<br>• 2b-6 participation for all in the knowledge based economy [ and society] |
| Future value | Currently a readiness indicator for ICT usage |
| Links to other indicators | Can be used in conjunction with other demographic, independent variables |

| **Name of indicator** | **A.3.12.b Reasons for discontinuing internet service** |
|---|---|
| Definition | Those households that once had but do not currently have electronic access |
| Notes | Categories "no longer owns a computer" and "cost, too expensive" are most relevant for info-exclusion |
| Sources | US Dept of Commerce |
| Countries covered | USA |
| Time series available | Yes, limited ( data for 1998 are also available) |
| eEurope relevance | General relevance to 2.b 6 "participation for all in the knowledge-based economy [ and society]" |
| Future value | Ensured, and more relevant with diffusion of digital TV service |
| Links to other indicators | |

| **Name of indicator** | **A3.12.b Experience of using the Internet measured in time (years)** |
|---|---|
| Definition | "Including your work experience, how long have you been accessing the Internet? (Select one)<br>• Less than1 year<br>• 1 year to less than 2 years<br>• 2 years to less than 3 years<br>• 3 years to less than 5 years<br>• 5 years to less than 7 years<br>• 7 years to less than 9 years<br>• 9 or more years" |
| Notes | Quoted from the report, can also be used to classify users according to their adoption rates ( e.g. more novice versus more seasoned users) |
| Sources | GAO |
| Countries covered | USA |
| Time series available | No |
| eEurope relevance | • 2b-6 general indicator for participation for all in the knowledge-based economy [and society] |
| Future value | Relevant |
| Links to other indicators | Technical access indicators |

## 3.3 Annex III Some methodological issues revisited

### 3.3.1 Objects of research and their heterogeneity

In terms of object of research and policy makers' concerns, the main concern is the inclusion of all traditionally vulnerable people into the Information Society. Depending on the exact focus, considerable space has been given to the varied vulnerable groups and individuals – mainly people with disabilities, the elderly, people on relatively low incomes, people with relatively low educational and skill acquisitions, racial and ethnic minority groups, and those living in remote locations. The barriers these people face are pertinent to their situation and are inherently diverse. Indeed, for example, the presence of physical or intellectual disability is not the only source of potential and actual disadvantage in relation to the Information Society. At the same time, other groups and individuals also have to overcome some sort of barrier in order to obtain equality of access to ICT and, crucially, to gain benefits from the information society, since disadvantage can also be linguistic, culturally embedded and reinforced, economical-resource oriented, skills based, age-related, gender-based[59], or a combination of some or all of these.

The implications of the above for Sibis are significant. In general, social researchers need to fully grasp their intended "object" of research, frequently defined as unit of observation to be studied. This is particularly the case in relation to this Topic. Given the varied nature of potentially excluded individuals and groups, achieving the norm of general understanding is / will be made that more difficult. However, we contend that the best way to proceed is to attain a good awareness of each of these groups and individuals in order to form an informed enquiry path.

For example, it is important to get to know the individual units of observation well in order to assess their receptivity of technology, since it is directly related to their propensity to participate in the information society as a whole. For example, the receptivity of older people or seniors differs to that of other groups, not least due to their relatively higher probability to espouse socially acquired perceptions of technology. Thus[60] due to their apprehension towards making mistakes they are more likely to find technology intimidating, which is not helped by a computer–centred design of software displaying messages suggesting that the user has made a "fatal error" or performed an "illegal operation". Many reports find older people to be less enthusiastic in relation to new ICTs, but few researchers appreciate the fact that technology designers regularly fail to exhibit the awareness of the accumulated experience of seniors in dealing with technology in general, the experience that has been formed upon seeing or using many unsuccessful or over-hyped general technological applications. Another area where the designers expect the seniors to "unlearn" and reverse their experiences relates to the time lag associated with the modal nature of many ICT applications, contrary to the instantaneous operation mode of conventional electromechanical devices that seniors are accustomed to.

As indicated above, neither of the aforementioned groups that are actually or potentially info-excluded is monolithic. Therefore, drawing precise boundaries around them is made more difficult. To take the above example of older people, we are all aware of the marked differences among them, based on economic, health and age cohort variables. Similar parallels can be drawn for other main groups and this issue will remain relevant throughput the whole process - for research design (methodology), data gathering and interpretation.

Apart from knowing the objects of research, it is also important to be aware of some relevant issues that can be related to it. Thus, it has been pointed that user input is often missing in relation to designing new ICTs and services, especially in case of traditionally excluded groups [61]. However, the message was brought home and the steps are now made to redress this.

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[59] The gender divide will not feature prominently in this report since many observers feel that its importance has declined / is likely to decline in near future. It will be revisited however in later work for this and subsequent workpackages, especially WP5.

[60] As well pointed by Stuart, 2000.

[61] Haddon, in Mansell and Steinmueller, 2000.

For example, in relation to designing assistive technologies products, user input is now considered a precondition for success since it was found that most of successful products tend to be characterised by high user involvement throughout the whole process, which in turn assists and results in high understanding of user needs. In addition, real life testing and iterative development process are equally important[62].

On the other hand, the above is also relevant for "Design for all" concept and its wider application. Thus it can accommodate for declining faculties of seniors as well as for the difficulties that people with disabilities might have in relation to accessing and using ICTs. Equally, it is relevant for accommodating a varied educational background of users.

Another issue relating to the object (s) of the research that has been undertaken regarding the Topic is the need to be aware that dichotomous nature of the digital divide in so-called "pure sense" might not be the best description of the real world. In order words what many refer to as "information *haves* and *have-nots*" is too restrictive a perspective, and this model of dualisation or juxtaposition tends to classify people into the corresponding two groups only. A more nuanced perspective[63] is preferred, the one that is analogous to for exmple, the concept of relative disadvantage (developed and articulated by Townsend, 1987)[64]. In other words, while we may indeed find that some people have access to and / or use all new ICTs and some have none, the area in between these two extremes represents a rich research ground. In addition, the awareness of what is possible and available in relation to the ICTs is relevant for the issue of info-inclusion and participation.

Continuing from this need for a more nuanced perspective, the digital divide is also visible / can be detected by analysing digital content. Thus apart from gaining access (defined either technically and physically, or in terms of accessibility and ability to use ICTs) it is important for the individuals and groups at risk form falling behind in the Information Society, to have *access* to useful content on the Internet. Thus research in the US[65] has found that useful content should include employment, education and business development information (particularly at the local level), that information in general should be easily understood by all (e.g. this can be enhanced by providing multi-lingual content, showing the awareness of cultural diversities of users) and that opportunities for creating content and interaction should be enhanced and nurtured.

Similar conclusions stem from analysing the Internet usage by the affluence level (e.g. measured as household income level). More recent research in the US has also shown that the gulf between early and late adopters of the Internet technology might need to be measured with more sensitivity, rather than just in the amount of time spent on the Internet. Thus it was found that more affluent users tended to be more experienced and able to streamline their time spent on the Internet, while those who were more recent and less affluent adopters tended to spend more time finding their way around and searching for the desired content [66].

### 3.3.2 Addressing some concerns regarding reaching target audience

It has already been pointed out that the main research technique – CATI ( computer assisted telephone interviewing) has some inherent difficulties in relation to reaching some of the Topic target audiences ( elaborated in WP 1). However, these difficulties notwithstanding, it is suggested that it can be effective if supplanted with additional available techniques ( appropriate dealing with unlisted numbers and the ways to include them, repeated callings, stratified sampling, utilisation of weighting to adjust the sample towards the official statistics, etc). CATI technique is also conducive for gathering timely statistics and lends itself well to cross-national studies such as Sibis, especially if national speakers are used, as intended.

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62 USDAT project, Assistive Technology – Added Value to the Quality of Life, 2001

63 (e.g. Haddon, in Mansell and Steinmueller, 2000)

64 The concept is also relevant for our continuity perspective on the Information Society.

65 Online Content for Low-Income and Underserved Americans, 2000.

66 *The Dollar Divide*, Media Matrix, 2000.

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